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Kindness of the Baltimore *Sun* and of Henry L. Mencken

MAX BRÖDEL

BULLETIN OF THE MEDICAL LIBRARY ASSOCIATION
VOL. 33, NO. 1
JANUARY, 1945

Editorials

THE POSTCARD POLL

THE EDITORS are grateful for the widespread response received in answer to their request in the October 1944 number of the Bulletin for guidance in planning future issues. At this writing 97 postcards have been received.

The number of votes for each preference was as follows:

35 Include both kinds of material in each number, in about equal proportions.
37 Continue present policy of alternating historical and librarianship numbers.
13 Reduce the proportion of historical material.
9 Include both kinds of material in each number, but reduce the proportion of historical material.
2 Either continue present policy of alternating historical and librarianship numbers, or include both kinds of material in each number, in about equal proportions.
2 Reduce the proportion of librarianship material.
1 No preference.

It is apparent that a majority of the voters favor continuing the policy of including historical as well as library material in our Bulletin.

The editors are particularly pleased that so many have volunteered to contribute articles or have suggested subjects about which they would like to be enlightened.

The "additional comments" received are as follows:

"I have found the Bulletin most interesting; I think both historical and librarianship material should be included, the proportion to be left to the discretion of the editorial staff since it would depend on what material and how much of it they had to work with."

"Enjoy every issue—informative and scholarly."

"A number of my friends who have looked at copies of the Bulletin have been particularly interested in the historical material. Favorable comment has also been on the illustrations and format generally."

"The Bulletin is first rate; don't worry about it."

"No comments—only praise for a most interesting publication."

"More Doctors (M.D.) should have this journal brought to their attention."

"Having just joined the M.L.A. I have no suggestions to offer, but want to let you know that I enjoy the Bulletin immensely."

"Think you are producing an interesting and informative publication."

"Would like more practical articles on Hospital Medical Libraries."

"I think it is a fine job!"

"I consider your magazine excellent, both practical and broad in scope. We bind it and keep it on our reference shelves."

"Think the Bulletin is quite a credit to the M.L.A."

"It seems to me that during wartime the issues should be thinner. I should not have reviews of purely medical books."

"The last issue was my idea of a good practical one for my purposes. Would like more up to date book notices and more of them."

"There are other medical history journals but this is the *only* medical library journal."

"I enjoy the Bulletin and find it most useful."

"I was particularly enthusiastic about the current issue of the Bulletin. To my way of thinking that was an ideal number."

"Current number is best one ever published from my point of view. Keep some historical material since *Annals of Medical History* is no longer published."

"Your magazine is very helpful and instructive."

"It is a bulletin of the library association and should be devoted to printing news of its activities. Other material makes it more attractive. It is clearly indicated because it deals with books in the libraries."

"The Bulletin is so much more interesting than formerly that it should appeal to a much wider audience."

"It is our opinion that many of the articles in the Bulletin are both practical and timely."

"I regret to see the small section on news of the members and their activities omitted. That is the only way we can keep in touch with some of the members."

"Although we are all interested in the history of medicine, we do not want a rival to the *Bulletin of the History of Medicine*."

"With many new assistants in medical libraries, more articles on everyday problems and techniques would be useful."

"Most of all, don't make any radical changes. You have an excellent journal. Keep it that way."

"Coming as this does from one not particularly interested in the history of medicine, it must be properly discounted, but with as good a periodical as the *Bulletin of the History of Medicine* functioning well, it does not seem that we are justified in entering the field."

"I have enjoyed your Journal immensely in the last few years, and am sorry that I did not subscribe to it earlier."

"You seem to rate the value of an article with the obscurity of the sub-

ject, the one increasing as the other increases. Why so much concern over the long out-moded opinions of an uffteen-century writer when you could have a discussion of Jacobi vs. Contemporaries? . . . ¶There are other subjects I would be interested in. 'What Happened to the Medical Libraries of the Greeks.' 'What Medicine Once Believed, Quit Believing, and Now Again Believes.' 'The Bee in Medicine.' 'Medical Journals that Lasted Less than a Year.' 'Which Edition, or Editions, Should the Library Save?' ¶My objection, if I had a strong one, has not been to the assortment of material carried in the Bulletin, but to its excessively high tone. . . . How many association members do research work on the level you indicate? We are not concerned with what incunabula to throw away, but rather with which of the older books, ten to thirty years old, to hold, or discard. . . ."

"A section for discussion of questions arising about library problems might be useful to many of us."

"We should write more on medical librarianship without a doubt, but I can't suggest how to get the articles out of people—they are so busy now."

"I find it profitable as well as diversional; article on Vattemare in October number I found very interesting."

JOHN GRAUNT AND HIS BILLS OF MORTALITY

IN 1662, John Graunt, a citizen of London, addressed to the Right Honourable Baron Roberts, Lord Privie-Seal, his "Natural and Political Observations," based upon Bills of Mortality as they were called. The preface in its fulsome adulation of his lordship falls little short of what would now be accepted as satisfactory if of a Sunday it were offered by a worshiper in church. But let that pass, for his *Te Deum* can be read in the original if you care to spend the time. There is also an epistle by the same author, dedicated to Sir Robert Moray, Privy Council for the Kingdom of Scotland. Graunt himself winds up by saying that he ought to have dedicated his book to the King, that "Prince of Philosophers and Learning," save that his own name was not fit to be mentioned in the same breath with the name of His Most Sacred Majesty. Mind you, this divine creature was no other than Charles the Second!

The modest book has an index of its seventy-nine pages, of 106 headings, showing that the discourse treats of burials, christenings, the plague, the proportion of deaths in acute and chronic diseases, the percentage of those dying of old age, the deaths from starvation and murder. It is likewise concerned with the number of those who die insane, of stopping of the stomach, and of rising of the lights. It tells us about deaths in childbed, what the population is in England and Wales, and withal, why people breed less in London than elsewhere. It furnishes some facts on overcrowding, even speculating on what Adam and Eve might have accomplished after 5610 years.

This John Graunt was our first vital statistician. Originally a haberdasher, he became a councilman, a politician, and finally a compiler of mortality tables. Without formal education, he achieved the distinction of election as an original member of the Royal Society. His work, of which only the 2d edition appears to be extant, is probably our earliest mortality table. In it we note that weekly mortality statistics first appeared in England in 1603 at the Parish-Clerks Hall, in the reign of James I. We learn that in 1623, of some 50,000 burials in London, only twenty-eight died of the plague. In 1625, out of 54,000 burials, there were 35,000 who died of plague. By 1632, this disease had practically disappeared for the time being, to reappear in 1636 and again in the terrible epidemic of 1665 of which Graunt may have had a premonition when he wrote his book.

It is interesting to examine the tables of "notorious diseases." It can hardly fail to remind us of the general run of death certificates in the more backward of our American communities of forty years ago. Here we discover that apoplex, falling sickness, dead in the streets, headache, lethargy, lunatique, overlaid and starved, palsy, sodainly, frighted, hanged themselves, smothered, and vomiting were admitted as sufficient explanation of the cause of death. There were 279 persons who passed away of grief, and 86 were murdered. Only two died of excessive drinking! Merrie England may not have been as mirthful as we suppose. Folks reached old age at seventy for the most part, as they do now. If one died older than seventy, he must of course have succumbed to old age.

Graunt even proposed that the swarm of healthy mendicants in London should not subsist by begging, but should be kept by the State, "So they could live respectably and not in debauchery!" Here he was well ahead of his time, perhaps exactly 270 years ahead, if you wish to use the adding machine. He made some original remarks upon procreation in men and in animals, and perhaps this might give pause to the Teutonic mind of this day and generation. We may suppose that John Graunt hardly knew how well he wrought, but as a constructor of mortality tables, without doubt, if he were living today, he could at least defend his observations from Mark Twain's classification of untruths into lies, damned lies and statistics.

HAROLD W. JONES

Max Brödel, 1870–1941

Director of the First Department of Art as Applied to Medicine in the World

By THOMAS S. CULLEN, M.B.

AS THE YEARS roll by and this war-torn world finds itself again at peace we will gradually catch up with the things we have not attended to or have missed completely.

There was in Baltimore a kindly, curly-headed man of quiet demeanor, beloved of his friends and possessed of a passion for music. He was a born artist and during his forty-eight years in Baltimore revolutionized medical illustrating in the United States and Canada; his work has reached even the uttermost parts of the earth. No other man who has ever lived has done as much to improve the beauty and accuracy of medical illustration.

In the following pages I shall endeavor to give in some detail the picture of this man and of what he has accomplished. Less than two months before he died he gave a full account of his many years of stewardship. This was in a paper entitled "Medical Illustration," published in the *Journal of the American Medical Association,* August 30, 1941, Vol. 117, pp. 668-672. To Morris Fishbein go my warmest thanks, for I have used portions of the article wherever they could add to the proper portrayal of that Master Medical Illustrator. In after years, as he is now in many places, Max Brödel will be recognized as the greatest medical illustrator who has ever lived.

Max Brödel, Illustrator for Dr. Howard A. Kelly

Several years ago I asked Max Brödel to tell me about his early life and he jotted down the following which I have in his own handwriting:

Born in Leipzig, June 8, 1870. He was the son of Louis Brödel and Henrietta Frenzel Brödel. He went to the public schools until 1884. His father loved music and forced his son to study piano, beginning at the age of six. For several years he played nothing but scales, Czerny, and trivial sonatas. Finally he had sufficient technique to plunge into Beethoven. His teacher purposely kept him away from Beethoven until he was equal to playing his Sonata

Appassionata. Beethoven has had a powerful influence upon Brödel's entire life.

Brödel went to the Technical High School, 1884-85; then to the Leipzig Academy of Fine Arts, 1885-90. During the vacation he worked in the Anatomical Institute for His, Braune, Spalteholz, and later in the Physiological Institute for Carl Ludwig and his pupils. It was there that he met Dr. Franklin P. Mall in 1888.

Brödel was drafted into the army, November 8, 1890, to serve two years. Through the good offices of Geheimrat Carl Ludwig, Prince George of Saxony ordered that Brödel serve only one year with arms and that he devote the second year to artistic activity for the regiment.

In 1892 Brödel returned to Leipzig to free lance in fine art and anatomical and physiological illustrations.

Negotiations to come to America began in 1891 but because of misunderstandings, resulting from lost correspondence, Brödel did not arrive in Baltimore until January 18, 1894.

I can see Max as he arrived in Baltimore harbor in January, 1894. He was wearing a stiff black hat and the curly locks were welling out beneath the brim of his hat. He went to board with the Gills at 1640 E. Fayette Street where I had boarded during the Fall of 1891.

Max immediately started work with Dr. Howard A. Kelly in the Gynecological Department of the Johns Hopkins Hospital. One of the first drawings he made was of a case of prolapsus. Each operating day he would visit the operating-room and confer with the Chief; sometimes it was a specimen that Dr. Kelly wanted drawn, sometimes a new operation that was to be sketched. If the condition was not perfectly clear, Dr. Kelly, by a few judicious strokes, would clearly outline just what he wanted and Max would, at a glance, see just what Dr. Kelly desired drawn.

Max Brödel in his address at Dr. Kelly's 75th birthday dinner, on February 20, 1933, made this point very clear. I quote him verbatim:

> In the early years, Dr. Kelly's friend, Mr. Anthony Murray, made many excellent photographs, fine records of the dramatic aspect of surgery and of external lesions. But photography has its limitations and it is not hard to see where and why it fell short. I knew that it would be useless for me to compete with the camera in the realistic or imitative field. It was necessary to originate a different type of picture, one that would show far more than any photograph could ever do. To make such a picture is much more difficult. The artist must first fully comprehend the subject-matter from every standpoint: anatomical, topographical, histological, pathological, medical, and surgical. From this accumulated knowledge grows a mental picture, from which again crystallizes the plan of the future drawing. A clear and vivid mental picture always must precede the actual picture on paper. The planning of the picture, therefore, is the all important thing, not the execution.
>
> There is where we learned from Dr. Kelly. He had a way of making little

modest outline sketches when he explained his operative procedure to his illustrators. There were three of us now. Hermann Becker came in 1895, August Horn in 1898. Dr. Kelly had endless patience with us. He invented diagrams to show variations of form and relationship, motion, pressure, tension, rupture, the development of a pathological process, the sequence of operative steps, the placing of ligatures, sutures, etc.; in short, every clinical phenomenon, every operative procedure flowed in simple, eloquent lines from the end of his pencil. Few medical men can do that. What if the form was not quite correct; it did not matter, the spirit was there. We understood his diagrams; they were eloquent. In this way Dr. Kelly taught his artists the secret of the correct conception of an illustration, which is the very basis of all creative drawing. It usually was comparatively simple to build on, to give to the primitive contour correctness of form, to elaborate the plastic rendition and add surface texture. This is one great debt we owe to Dr. Kelly, and now for another: while making a drawing the conscientious artist has a way of discovering gaps in contemporary knowledge, so when knowledge was lacking and the literature silent on the subject, Dr. Kelly always permitted the artists to make original investigation to clear up the obscure point. That meant temporary cessation of illustrative output until the question could be answered. He never failed to give his consent to such digression. Few authors of medical books will do that. Without his sympathetic attitude we could not have learned our trade as we did.

It was not long before Dr. Kelly was publishing articles containing Brödel's illustrations, and these illustrations at once drew forth very favorable comments. When Dr. Kelly's two volumes on Operative Gynecology appeared in 1898 Dr. Kelly was at once recognized as the leader in American gynecology, and Brödel's illustrations in these two volumes immediately revolutionized medical illustrating.

Brödel made the majority of the gross pictures and Becker many of the histological pictures. Horn also made excellent gross and histological illustrations.

During all the years Dr. Kelly was most generous in agreeing to have Brödel make pictures for members of his staff, and every now and then, when a colleague in another department needed an illustration badly, Dr. Kelly gladly had Brödel do it for him.

Max Brödel was not only a wonderful draftsman: he had also a wide knowledge of anatomy and was a born investigator. For example, on one occasion Dr. Kelly wanted some anatomical data about the blood supply of the kidney. Brödel would go to the autopsies in the Pathological Laboratories, get a normal looking kidney, attach it by a tube to the tap, and wash out the kidney. He would then fill the arteries of the kidney with red, the veins with blue and the ureter with yellow. Next he would digest the kidney, using the digesting method he had seen Mall use in Ludwig's laboratory in Leipzig. The results he obtained were fascinating.

Various portions of the kidney reminded one of branches of an apple tree, and all over these branches were minute apples—they were the glomeruli or filters of the kidney. He pointed out the avascular area in the kidney and suggested opening the kidney along this line when exploring the kidney for stone, and before finishing this kidney investigation, he developed a suture which could be used to stitch up the kidney that had fallen down—one that was prolapsed. This suture is to this day referred to as Brödel's suture; it is triangular and so placed that a piece of kidney will tear out before the suture will give way.

In 1916 I published a 680 page book, *Embryology, Anatomy, and Diseases of the Umbilicus.* The best part of that volume is the embryology. Brödel had the opportunity of studying the most extensive and best collection of human embryos in the world, a collection started and continued for years by the late Franklin P. Mall. Without it such embryological studies and such drawings would have been impossible. This collection of embryos, after Dr. Mall's death, was greatly increased by Dr. George L. Streeter, who became Director of the Carnegie Laboratory, and when Dr. Streeter retired, by his successor, Dr. George W. Corner.

Let me give you one other striking example of Brödel's investigative spirit. I had collected an interesting group of cases, in which, for some reason, there had been a sudden rupture of a rectus muscle with hemorrhage. I asked Max to make me a drawing or two of the rectus muscle. That he had long been interested in this important muscle was unknown to me. In the course of a few months he had studied the rectus muscle most carefully and had also gone into the histology of it. The drawings he made were masterpieces. I told him we would have to publish the article jointly, as I could not for a moment lay claim to these wonderful drawings. Finally, he reluctantly consented and it was published under our joint names. He was modesty itself and most self-effacing.

In 1919 I published a short sketch of Dr. Howard A. Kelly in the *Johns Hopkins Hospital Bulletin.* Accompanying this article was a relatively complete list of Dr. Kelly's publications, prepared by Miss Minnie Blogg. The vast majority of these publications were illustrated by Max Brödel or by his associates, Hermann Becker and August Horn. To speak of these many publications would carry us too far afield.

Color reproductions in the text probably reached their high-water mark in *Cancer of the Uterus,* published in 1900, and in the *Umbilicus and its Diseases,* published in 1916.

MAX BRÖDEL'S ARTIST MODEL

Most artists have models. The majority of Max's drawings had to do with tumors or with operations; consequently he needed no regular

model. On a few occasions, when he was a relatively young man, and when he was illustrating Dr. Kelly's new method of examining the bladder and ureters, he required a model from which to sketch the knee-chest posture. Every time I see the drawings he made on those occasions I cannot help smiling broadly. I was Max's model, and you may rest assured that it was easier for me to assume the knee-chest posture at that time than it is now.

Max Brödel as My German Teacher and as My Companion

Almost immediately after Brödel came to Baltimore he and I became fast friends. At that time I had charge of the laboratory of Gynecological Pathology and would watch him making sketches of the tumors that had been removed. Later on I would go to his small studio and read. Just as soon as Brödel reached Baltimore he began to talk English and I began to attempt to answer him in German. Although I had had quite a number of lessons in German, my knowledge of the language was very fragmentary. As he spoke English and I German we very frequently had temporary misunderstandings, but as our knowledge of the two languages became greater we got along perfectly. In my spare time, while he was at work on a drawing, I would read a German book aloud. In the course of a few years I had read several novels by Gustav Freitag and two large volumes on the Franco-Prussian War. Of course Max would correct my mistakes in pronunciation as we went along.

Having Max as my teacher was of inestimable value to me. I soon could read medical German with relative ease, and on one occasion the reading knowledge of German relieved me of much embarrassment. At an international congress in Rome in 1902 I gave a lantern talk on adenomyoma of the uterus. The medical amphitheatre of the university was crowded. The speaker who preceded me came from the United States and few understood what he was saying. Prof. Paul Zweifel of Leipzig, whom I knew well and who was sitting in front of me, turned round and said, "Cullen, you must talk in German; there are not four persons in the audience who can understand English." I told him that I could not, but he said, "You must."

In a moment or two I was called upon and after explaining the matter to the presiding officer, who was an Italian, I started to talk in German and kept it up for forty minutes. I made many mistakes, of course, but my pictures on the screen helped mightily. My attempt to speak in German evidently pleased the Italians, as they made me an honorary member of the Italian society the next year.

Max and I stood by our original intentions. He was always to speak

English and I German. During the nearly forty-eight years of our friendship, I spoke in all less than two hours in English to him.

In the early days Max and I would in the afternoons take long walks out into the country and after traveling a couple of miles we would sit on a fence and read German. At other times we would take the car out to Walbrook and have a long walk along the millrace. Sometimes we would journey down to Cambridge on the steamer to visit Dr. Brice W. Goldsborough and his brother, Phillips Lee Goldsborough, later Governor. On other occasions we would run up to Waynesboro, Pennsylvania, to visit our friend, Dr. A. Barr Snively. On at least one of these occasions we returned to Baltimore on our bicycles.

In the fall of 1897, just after I had completed my term as Resident Gynecologist at the Johns Hopkins Hospital, Max and I went to Groveton, New Hampshire, and started on a hunting trip with a one-armed guide who was a delightful fellow. He lost his way and we slept out in the open. It froze during the night, and next morning there were fresh bear tracks within one hundred feet of where we had slept. We started off early that morning and had to cross a small river on a fallen tree that still retained its branches. To make it more difficult, we had to carry our satchels with us. Late in the day we reached the cabin of a deserted lumber camp. That night, while we were sitting by the fire, a lynx pressed its face against a window pane to see what was going on inside. Next morning we stepped out to the stream which was not over ten feet away. As there was a little ice on each bank of the stream we had to step in very carefully in order that we would not cut our feet. The brook trout darting up and down stream gave us a real thrill. Later in the morning Max and I were sitting quietly on a log in the forest hoping a deer would come along. We really were so quiet that a squirrel came up and sat down beside us on the log. We saw no deer.

Early in 1923 I had my second gall-bladder operation and took several months off. Max and I and our old friend, Alf Raaflaub, of Pembroke, Ontario, visited the homes of my childhood. I say "homes" because my father was a Wesleyan Methodist minister and according to the church rule we moved every three years. Max made sketches of some of the old homes, of one old swimming-hole where I had spent many happy days, of several of father's old churches and of many other interesting things. We had a glorious time and often referred to the fun on that trip. All this material was gathered together at the time, over twenty years ago. It is growing mellow and may possibly some day appear under the title, "From One to Twenty-One."

Max was an expert fisherman and if anyone could catch fish, he could. Well do I remember the day when he said, "Tom, I have some fine minnows; let us go fishing." After luncheon he and I started off for Burnt Island, which belongs to Miss Olga Kelly and lies about

a mile and a half north of the Kelly camp. After dropping anchor, Max put a wonderful minnow on my hook. Within five minutes my line started out. After it had gone about thirty feet I checked it, and after playing the fish for about five minutes, cautiously reeled it in. Max gaffed it and drew it into the boat. It was a wall-eyed pickerel weighing nine pounds—my best catch. Max had made his own gaff; it was an ordinary butcher's hook on which meat is hung. The handle of this hook had been embedded in a wooden handle about eighteen inches long. It was an ideal gaff. Max also repaired his own fishing tackle.

Frequently I went over to see my youngest sister and her family on an island about eight minutes away. On the way back I would invariably drop in to say hello to Max if he were fishing on his wharf. As soon as he saw me coming he would leave his rod and slip behind his boat-house to the shore; by the time I got there he invariably had a red and green bouquet to hand me, a fine bunch of young radishes. He had a new crop of these every week or two, and this was a regular ritual with him.

On one occasion, with Chancellor James H. Kirkland of Vanderbilt University and Abraham Flexner, the distinguished Director of the Institute for Advanced Study at Princeton, Max and I went to Horn Lake after lake trout. Kirkland and Flexner were trolling along slowly when suddenly my reel slipped off and dropped into ninety feet of water. Both Flexner and Kirkland were just like two small boys and teased me unmercifully. As I started to draw in, the wire gradually unrolled from the reel until all was unwound. The reel then came to the surface. To unreel and then reel up hundreds of feet of wire without kinking any of it was certainly a feat. It was in large measure due to Max's skillful handling of the canoe that he and I were successful.

We then had luncheon on a small island which had a very steep slope into the water, which at that point was over fifty feet deep. All of us were sure-footed. I built the fire, the Chancellor boiled the potatoes, Max made the coffee and Abe Flexner fried the bacon. We had a delicious luncheon.

I have given you this glimpse of Max Brödel to show you that he was no dreamer, that he was very capable in solving small difficulties as well as large ones, and that he was an ideal and most lovable campanion. He was absolutely fearless and most unconventional. I can still see him out in his small motor boat fishing at the point at dusk. The exhaust of a motor boat ever brings back to memory that genial, curly-headed friend of mine who, when getting up to speak at the dinner given me by nearly five hundred friends of mine on my seventieth birthday, stepped up and kissed me on my bald head before beginning his speech. Nobody ever had a better or truer friend.

Max Brödel's Illustrating Apart from Medicine

Most of Max Brödel's friends thought that he made only medical drawings, but such was not the case. During his summer vacation he would every now and then find time to make a drawing from nature.

I have in my library three of these pictures. The first is a beautiful painting of our log cabin, with the solid rock in front and the blue sky and white fleecy clouds, so characteristic of this vicinity, above and in the background. I can see Max anchored out on the lake making this picture. Next to that painting is one showing the interior of our log cabin with its fireplace and with the contents of the cabin depicted in careful detail, and in front of these pictures, illuminated by a study lamp, is a view of Ahmic Lake as seen from our sleeping cabin. It shows at the end of Rhodes Island the land of my youngest sister and her husband, Mr. and Mrs. R. A. Daly of Toronto. Across the lake from Rhodes Island rises a very tall tree on the mainland, on the property of my friend, Abraham Flexner, and down our side of the lake, about half a mile from our camp, is a boathouse, belonging to Max Brödel's family; their camp is hidden by the trees.

When I come in from a busy day's work and am a little fagged, these pictures act as a strong stimulant and carry me back to the glorious times we have had on and around the lake.

When we took long trips through our woods, Max would be on the lookout for fungi. These were often a foot or a foot and a half long and were attached to the sides of the trees. They were usually brown on top, pure white on their under sides. Brödel would take these fungi home, carefully protecting the white under sides of the fungi. On reaching home he would, with a pen, a pin or some other sharp instrument, etch a charming scene on each fungus. These pictures he usually presented to his friends. They were greatly admired and treasured; I have never seen their equal.

Max Brödel modernized the seal of the Medical and Chirurgical Faculty of Maryland, providing the seal now in use. He also made bookplates for the John M. T. Finney, the John Ruhräh and the William Osler collections of books of the Medical and Chirurgical Faculty. Among the limited number of bookplates made by him was one for Dr. Lewellys F. Barker. I am the happy possessor of another, the theme for which was arranged by Mrs. Cullen and Max.

Max Brödel made the famous cartoon, "The Welch Rabbits." "Popsy" Welch is standing up with a cigar in one hand and in the other are grasped the reins leading to the younger men who are pictured as rabbits. They were men whom Dr. Welch had trained or who had been associated with him. The cartoon was made at the time a very large

dinner was given to Dr. Welch. Many copies are in existence; the original was given to Dr. Welch's niece.

Back of me as I write in my library is the original of the now famous cartoon, "The St. John's Hopkins Hospital." Dr. Osler is adorned with halo and wings; his toes are sticking out of his small shoes. In the background is the Johns Hopkins Hospital, and in the whirlwind starting at the hospital and rising heavenward is Osler. Below him are many germs; some of them are scurrying away, others just don't care a damn and are sitting down resting on their haunches. Dr. Osler sometimes addressed letters to me and to others to "The St. John's Hopkins Hospital," and it was for this reason that Max drew the cartoon.

Before entering the operating room the surgeon and his assistants take off their street clothes and put on cotton shirts and trousers with drawstrings and without buttons. If the operator is thin there is usually no trouble, but occasionally, where the surgeon is stout and where the drawstrings are at the equator or slightly below, the trousers may slip. The nurses and students were well aware that on several occasions my trousers had slipped, but that really made no difference because the operator wears a sterile gown which extends to his knees.

In January, 1923, at an operative clinic, a student handed my head nurse a long, slim package addressed to me. I at once opened it. On the cover of the box was the picture of a very pretty girl. The box contained a fine pair of suspenders with a note to me expressing the best wishes of the class and presenting these suspenders for emergencies. I thanked the students for the beautiful and valuable suspenders but reminded them that I had no buttons.

A few weeks later, on February 28, 1923, an operation revealed that I had commencing gangrene of the gall-bladder and that the gall-bladder contained many stones. Max Brödel was present at the operation and took the gall-stones to his studio, where he made a facsimile of my name with the date. He used the individual gall-stones in reproducing my name and date in color and then made a frame around the picture using the large and irregular stones for this purpose. So graphic was the picture that one of my special nurses, when she saw it, immediately put out her hand to pick off one of the gall-stones from the frame of the picture. She really thought that the large gall-stones had been glued on to the picture.

On a bitterly cold and damp morning, about six days after my operation, Max had my student group congregate on the hospital bridge near Ward D for an exhibit. First of all there was the pair of suspenders with the kind note from the students; then came the painting of my gall-stones with the following note beneath: "The reason why the

drawstrings were not drawn tight." All were greatly pleased with Max Brödel's unique and telling demonstration.

The Brödel Family

Ruth Huntington, a charming young lady from Sandusky, Ohio, had had an excellent training in anatomy and art at Smith College, where she majored in scientific subjects, especially in zoology and botany. She always loved drawing, and her laboratory books attracted the attention of her professors to such an extent that they requested her to make charts to be used in the classrooms and to illustrate some of their articles. She was recommended to Professor Bailey of Cornell to make drawings of rare plants in the very fine, endowed botanical gardens in Northampton; she also furnished fifty illustrations for his *Encyclopaedia of American Horticulture.*

In 1900 Professor Franklin P. Mall asked Miss Huntington to come to Baltimore. Here she illustrated some embryological reconstructions for Dr. Charles Bardeen. As soon as she arrived at Dr. Mall's laboratory, Max Brödel went over to pay his respects to the new artist. He showed her the drawing technic he had developed for his students and in a short time learned to his pleasure that Miss Huntington was also a musician. Max suggested that they play on the piano together occasionally.

A little later she began work on the appendix book which Dr. Howard A. Kelly and Dr. Elizabeth Hurdon were about to publish. Brödel supervised the drawings made by Miss Huntington and August Horn for this beautifully illustrated volume. Incidentally, Brödel and Miss Huntington jointly wrote the anatomical chapter for the appendix book, and in the preparation of this made frequent trips to the Surgeon General's Library to look up the literature on this subject.

Naturally, it was not long before Max thoroughly appreciated Miss Huntington's unusual ability both as an artist and as a musician. They often played on the piano together. One summer Dr. Kelly invited Ruth Huntington and Max to his summer camp on Ahmic Lake. On a memorable day Max and Ruth paddled over to Birch Island, about half a mile from the Kelly camp. They returned late that day looking very happy, and that night Dr. Kelly, around the camp fire, announced their engagement. They were married in 1902.

A few years later, the Brödels built their camp on Ahmic Lake, and in 1910 I built mine along the same shore about half a mile distant from theirs. During the years four children were born to the Brödels. Little Ruth died while still a small child. Elizabeth, Carl and Elsa survive.

Elizabeth followed in her father's and mother's footsteps and is a

most talented medical artist in New York. She illustrates chiefly for Professor H. J. Stander at the New York Hospital. Carl is a Ph.D. of the Johns Hopkins University and specializes in mining geology. Elsa also has a great deal of artistic ability, and her advice is frequently sought about the proper selection of attire. She is now Mrs. Burk Allerton.

In the early days Max and Ruth lived at 707 Carrollton Avenue, next door to the Matt Tinker family, of whom we were all very fond. Mr. and Mrs. Charles Dohme and their family also lived on Carrollton Avenue; they and Mr. Louis Dohme could not have been kinder to the Brödel family or to me. Mrs. Louise Pomplitz was invariably included in the happy group.

For many years the Brödels lived at 320 Suffolk Road, Guilford. It was there that Mrs. Cullen and I spent a very happy evening once almost every week for years, playing bridge. Max was invariably my partner. Who usually won is a secret, but one thing is certain, Max and I often lost. With Max's going, and with the major portion of the Brödel family in New York, I rarely have the heart to pass 320 Suffolk Road, the scene of so many happy occasions.

Max Brödel a Remarkable Pianist

Max Brödel, as already mentioned, began his musical career when only six years old, and for two years his teacher allowed him to play nothing but scales, Czerny, and trivial sonatinas. After Max had practiced on these for two years he was given Beethoven's "Sonata Appassionata." He has often told me that in the playing of this he was almost overcome by its beauty and by its stirring qualities. When he came to Hopkins he always had a piano; sometimes it was in a room across from the hospital, sometimes in the center front room on the third floor of the hospital.

On March 24, 1899, Max entered the Johns Hopkins Hospital on account of a serious hand and arm infection resulting from some anatomical dissections he had been making. His hand and arm were opened on numerous occasions. Finally the wound healed, but some nerves had been caught in scar tissure and this complication necessitated further operation.

Brödel made many illustrations of his left arm and hand, showing the areas of numbness that existed following the operations for the infection. Dr. Halsted urged him to publish his case, together with the most instructive drawings, but Max was too busy and never did so. I saw the illustrations a few weeks ago.

In December, 1904, shortly after Brödel's attack of typhoid, a street-

car on which he was riding gave a lurch and he was thrown to the street. The middle finger of his right hand was bent right back on the back of his hand. It looked as if he might lose this finger. Fortunately, Dr. Finney was able to save it.

Had it not been for the excellent treatment given him by Dr. Halsted in 1899 and by Dr. Finney in 1904, Max's friends would have missed the many delightful and happy musical evenings he gave us in after years.

Brödel and Henry L. Mencken were the principals in the celebrated Saturday Night Club. Max derived a great deal of pleasure from the Club and attended it religiously. Every now and then I would invite him to spend the week-end down in the country. Time and again he would reply, "I wish I could, but Henry Mencken will be away on Saturday night and I must be there."

Up on Ahmic Lake was a jolly company consisting of some of the Kellys, the R. A. Dalys, the Abraham Flexners, the Chancellor Kirklands, the Benjamin Meritts, and the Cullens. Some or all of us would on frequent Sunday evenings congregate at the Brödels. Some sat in the numerous chairs, others, by preference, sat on the floor, all in camp attire, and listened to delightful music by Max and Ruth Brödel. These were evenings that we shall never forget; our debt of gratitude to the Brödels can never be repaid.

It is not generally known, but as a boy Max made such progress with his music that the musical authorities in Leipzig urged him to give up medical illustrating and to devote his life to music. Max Brödel was a remarkable pianist.

My knowledge of music is very limited, but on one occasion I accompanied Max to the piano. He and I were visiting our friend, Dr. David Houston of Troy. The night was very warm; Mrs. Houston was away, and Dr. Houston was out all night on an obstetrical case. When he returned in the morning he found our beds empty, but our clothes still in our room. After hunting the house over he finally looked in the parlor, which had been closed for weeks; the room was cool, and Max and I were sound asleep under the piano.

A Unique Tribute to Brödel

Max Brödel was made an honorary member of the Medical and Chirurgical Faculty of Maryland in 1909. He was the only layman ever accorded this distinction.

The Establishment of the Department of Art as Applied to Medicine in the Johns Hopkins Medical School

In 1910 Max Brödel, who had illustrated so many of Dr. Howard A. Kelly's papers and books, and who had made so many pictures for my publications, received an urgent invitation to join the staff of one of the finest private clinics in America. Dr. Kelly was loath to let him go but at the time had no large publications under way. Brödel said, "I was tempted to go elsewhere, but my roots were deep in the ground and I was loath to leave Johns Hopkins."

I was worried sick at the thought of my friend's departure. One day at camp I walked down to my tent, pulled out an old corncob pipe, filled it and struck a light and dreamed. I dreamed of a department of art as applied to medicine in the Johns Hopkins Medical School. Here artists who wanted to make medical art their life work could get a training of two or three years. Medical students could be taught how to make charts and blackboard illustrations, and the spare time of the head of the department would be taken up in illustrating articles published by members of the Faculty. In ten years the leading medical schools would have competent medical artists, and in twenty years American medical illustrations would be the best in the world, adding much to the prestige of American medicine.

After many heartaches, just four days before Brödel had to give his answer I was successful in enlisting the sympathy of a hard-headed business man who had a deep interest in art. This man, Mr. Henry Walters, promised $5000 a year for three years, and on receipt of his letter, I invited President Remsen and the Trustees of the University to luncheon at the Maryland Club at forty minutes' notice, as prompt action was necessary. The letter was read and the Trustees at once accepted the generous offer. Thus the Department of Art as Applied to Medicine came into being.

Attempts were made to secure an endowment, and the correspondence shows that the W. B. Saunders Company, medical publishers of Philadelphia, agreed to give $1000 toward the endowment. Mr. J. P. Morgan, through Dr. James Markoe, promised $5000 should the full $125,000 be raised. Dr. Markoe, an outstanding New York physician, was most helpful. A short time later, when he was taking up the Sunday morning collection in one of the leading New York churches, a crazy man, who had never known him, pulled out a pistol and killed him.

Mr. Walters offered to give $15,000 should the proposed $125,000 endowment be raised. The attempts to secure the necessary endowment

were, however, unsuccessful. Mr. Walters paid the $5,000 a year for three years, and finally told his Baltimore office to pay the Johns Hopkins University $2,500 every six months until he told them to stop. After continuing his benefaction for ten years Mr. Walters agreed to endow the department to the extent of $110,000. Thus Mr. Walters contributed in all $160,000 to the only Department of Art as Applied to Medicine in the world.

I wish the Brödels' friends could have seen the happiness on Max's and Ruth's faces when it was my rare privilege and pleasure to tell them that the Department of Art as Applied to Medicine in the Johns Hopkins Medical School had been endowed. Their faces shone with happiness, but a slight moisture was visible in the eyes of both of them. Up to that time the permanence of Max's Department had ever been in doubt.

Thus was started the first Department of Art as Applied to Medicine in this or in any other country. Max Brödel and his pupils have had a profound influence on medical illustrating throughout the entire world.

On March 1 of each year, Mr. Walters had on his desk in New York a complete report of what had been accomplished in the Art Department during the preceding year: the number of students, the parts of the country from which they came, the character of the illustrations, and frequently reproductions or photographs of the most important illustrations. He received a full report each year up to the time of his death. His interest in the Department grew greater and greater, and shortly before his death he wrote me as follows:

The Breakers, Palm Beach, Fla.
March 3, 1930

Dear Dr. Cullen:

I thank you for your kind letter of February 27 regarding the increasing influence of the work done under Max Brödel's supervision, and advising me that you have sent the report of the Johns Hopkins Medical School for the year ending February 28, 1930, which has been received at my office in New York.

It is a great pleasure to me to know that you led me into aiding you in establishing the Department of Art as Applied to Medicine, which has developed into so much real service to medicine and surgery.

(Signed) H. Walters.

At the time of Max Brödel's dinner, in 1938, Mrs. Walters wrote me the following letter:

Five East Sixty-First Street, New York, N.Y.
February 8, 1938

Dear Dr. Cullen:

Thank you for your kind letter of February 2. I appreciate greatly your thinking of me.

I do not think there was anything that Mr. Walters ever did, which gave him more satisfaction than the work, "Art as Applied to Medicine."

Very sincerely,

(Signed) Sarah W. Walters

The correspondence between Henry Walters and me relative to the Department of Art as Applied to Medicine in the Johns Hopkins Medical School extended over a good many years. It is intact and at the request of Mr. Morgan Marshall, Director of the Walters Art Gallery, has been deposited with the incunabula in a specially fire-proofed room in the Walters Gallery. Some one will, in due time, write a biography of Mr. Walters. His correspondence with me reveals a delightful side of him, a side that few knew anything about.

Presentation of a Portrait of Max Brödel by W. B. Saunders and Company, Medical Publishers of Philadelphia, to the Johns Hopkins University

In the Spring of 1937 Mr. R. W. Greene, vice-president of the W. B. Saunders Company, medical publishers of Philadelphia who had published many of the books brought out by Dr. Howard A. Kelly's department, dropped in to see me; he said that their company would celebrate its fiftieth anniversary on March 4, 1938 and that they wanted on that occasion to honor Max Brödel who had done so much for medical illustrating. He asked my advice as to the best plan to pursue.

In June I went down to Atlantic City to attend a meeting of the Board of Trustees of the American Medical Association a couple of days before the annual session. Mr. Greene took dinner with me on the night of my arrival. We finally came to the conclusion that probably the most appropriate thing would be for the Saunders Company to have Brödel's portrait painted, give a dinner to Max in Philadelphia, and present the portrait to the Johns Hopkins University where Max Brödel had done such wonderful work. The company at once decided on this plan of procedure.

The only difficulty was in persuading Max to fall in with these plans. I well knew his retiring nature and fully appreciated that the task ahead of me was not easy. On June 28, 1937, I wrote Henry Mencken telling him that just as soon as I reached camp I would take Max out in a boat where he could not possibly get away and then tell him what was in store for him.

On September 10, 1937, I again wrote Henry Mencken saying, "I wish you had seen Max the evening of the day he arrived at camp. He and Ruth took dinner with Mrs. Cullen and me, and after dinner I unfolded what is to take place on the 4th of March. His eyes bulged, he shook his head, he could not do it. As the evening progressed and as he

smoked a very delicious imported cigar he became more docile and in due time expressed appreciation for the honor in store for him. We shall have no trouble."

Mr. Thomas Corner, one of the country's outstanding artists, although very busy at the time, agreed to paint the portrait. He gave us a striking picture of Max.

The late afternoon of March 4, 1938 arrived and a full carload of Brödel's friends, lay and medical, left Mt. Royal Station, Baltimore, for the Barclay Hotel in Philadelphia. There they were joined by the leaders in medicine and surgery from all over the United States. It was a joyous company, as the great majority of those present were old friends of the distinguished guest of the evening. The members of the W. B. Saunders Company asked that they be allowed to stay in the background. Mr. R. W. Greene introduced me as the presiding officer and toastmaster. Max's and my old and beloved Chief, Dr. Kelly, slipped up to me and said, "Tom, may I say grace?" Of course he could; he did, and the dinner got under way.

After the dinner Dr. Howard A. Kelly spoke of the remarkable work Max had done at the Johns Hopkins Hospital and later in the Medical School. Morris Fishbein, the distinguished Editor of the *Journal of the American Medical Association,* told us of the profound influence Max Brödel had had on medical illustrating in periodicals and books. Henry L. Mencken described the celebrated Saturday Night Club which he and Max had started in 1910, just twenty-eight years before; this address, under the title "Max Brödel as a Pianist," appeared in "Tonics and Sedatives" of the *Journal of the American Medical Association* for March 26, 1938. Mr. Lawrence Saunders then presented the Corner picture of Max Brödel to the Johns Hopkins University. Because of the illness of President Isaiah Bowman, Dean Berry, an old friend of Max, accepted the portrait on behalf of the University, and we had finally a most appreciative and touching speech from our honored guest and beloved friend, Max Brödel.

We had had a delicious repast. The speeches were short and snappy. We returned to Baltimore the same evening. Everybody, including Max Brödel and Mr. Thomas Corner, the artist, had had a lovely time, and on the way home to Baltimore all were in a very happy frame of mind. On March 9, 1938, I had a short note from Morris Fishbein from Chicago. He said: "The dinner was marvelous and I shall always remember it as one of the big events of my life." The W. B. Saunders Company could not have done a finer thing for Max Brödel; as outstanding medical publishers they knew full well what this celebrated medical artist had done for the improvement of medical illustrating. A full report of the dinner is given in the *Journal of the American Medical Association* for

March 12, 1938, page 823. A reproduction of Thomas Corner's portrait of Max Brödel appears on the same page of the Journal.

"Medical Illustration," by Max Brödel

A number of years ago Morris Fishbein told me that he would like to have an article by Max Brödel giving a description of the Department of Art as Applied to Medicine. The paper, entitled "Medical Illustration," appeared in the *Journal of the American Medical Association* on August 30, 1941. We were fortunate, as Max left us on October 26, less than two months later.

In the paper Brödel gives us a panoramic view of how his department was run. It is of such interest and importance that I am going to give the highlights in his own words. In a few places there is a little duplication of what I have already written, but the repetition only serves to emphasize the various points. He says:

I believe that the illustrator will learn to regard the photographer not as a rival to be feared but as a helpful friend.

A medical picture may even be entirely synthetic and yet be drawn with convincing realism. To make such a picture the artist must know his subject so thoroughly that he can shut his eyes and coax into existence a mental picture of great clarity, complete in every respect. He also must be fully equipped to put this imaginary picture on paper, swiftly, accurately and, if necessary, with convincing realism. This is medical illustrating at its best.

The technic is a matter of choice—half-tone, water-color, oil, lead pencil, simple or elaborate pen and ink, or a combination of these. It should be remembered, however, that technic, artistic feeling, accurate draftsmanship, neatness and speed are all relatively unimportant. The planning of the picture and the registration of the scientific facts are what give it its value, not the execution.

As a rule a simple outline drawing is harder to make than an elaborate plastic picture. It is perhaps the most eloquent and useful type of medical illustration.

Much information, explanation and analysis can be crowded into a diagram. It may be stripped entirely of all form and structure, relying for its message solely on well chosen key words, figures and numbers, connected by lines and rendered more expressive by the addition of symbols, such as loops, rings, arrows and the like. Even the time element can be graphically shown, also cause and effect, sequence of stages in a disease or an operation. Most instructive pictures can be made that way.

For more than fifty years it has been my privilege to make medical illustrations in all the branches of the field.

Since March 1911 I have also taught medical illustrating at Johns Hopkins University School of Medicine. Horn had died, Becker's health failed and I was left alone. So it became my privilege to organize and develop this school from 1911 until 1940, a period of thirty years, very happy years to me.

The experience gained during this long period may be of interest to those wishing to become medical illustrators. I shall try to show that the making of a medical picture is an intricate process, requiring much specialized knowledge and skill. It takes years of preparation to become an artist good enough to serve the medical profession.

How I Became a Medical Illustrator

The Art Department of the Johns Hopkins Medical School was the first of its kind in existence. I did not plan it. It came into being through a series of fortunate circumstances which I shall briefly describe.

1. Fifty years ago most medical pictures in textbooks and journals were done by untrained, self-taught artists who knew very little about medicine and less about art. There were no others available, and as a consequence the pictures in the medical literature were of poor quality, far beneath the illustrations in non-medical publications such as magazines and storybooks. The draftsmanship of medical pictures was amateurish, the object ineffectually posed and illuminated, sometimes inaccurate in regard to its anatomy and topography. The object evidently was not properly understood by the artist, and the author was unable to help. He probably knew that something was wrong with the picture, but his attempt to suggest corrections usually made it worse. It must be admitted that the atlases were notable exceptions. They were costly tomes, mostly from an earlier period, magnificently illustrated with elaborate copper and steel engravings, later on by lithography, often in gorgeous colors. Much of their beauty was due to the exquisite technic of the engraver or lithographer, not to the artist who made the originals. The same was true of the really fine wood engravings of the early textbooks.

The photomechanical method of reproduction ended this period and the cheap reproductions and poorly made drawings began.

This was the state of medical illustrating when I entered the service of Dr. Howard A. Kelly on January 18, 1894.

2. I had been fortunate in having received my art training in an academy where meticulous draftsmanship was insisted on and where the graphic arts were included in the curriculum. Both were of great help to me in medical art.

It was also lucky for me to be poor, for I had to seek work during the summer vacations and other free hours throughout the year. I came under the eye of Prof. Carl Ludwig, the great physiologist, and was permitted to illustrate his research and that of his famous pupils. In the course of this work I met Dr. F. P. Mall and Dr. William H. Welch.

3. Luck pursued me. Through Dr. Mall I came to know and work for Dr. H. A. Kelly, whose brilliant work in gynecology marked the beginning of a new era in that field. He chose me to make the pictures for his first large publication, "Operative Gynecology." That was in 1894. I worked hard but with little success. Photography was called in to aid in holding the elusive steps in an operation, to produce a clinical picture or show a pathologic specimen. I was urged to accept the help of the camera and obediently did so for a while but soon abandoned its aid, realizing that mere copying of a medical

object is really not medical illustrating at all, which, as every medical man knows, goes much deeper than that. Moreover, an artist feels degraded when he copies or uses a photograph as a basis for his drawing.

4. It was fortunate for me that Dr. Kelly was not only a kind and patient chief but also an excellent teacher. He could see that my ignorance in medical matters was a handicap to me. I felt sure that I could draw what I understood but found it exceedingly hard to plan a picture so that any one, even a layman, could understand it. It was difficult for me to select the most suitable view, to determine what to show and how to show it, what to emphasize and what to subdue or leave out. This is where I hestitated and wasted time, as every novice does. It was lucky for me that Dr. Kelly had the remarkable gift of explaining with sketches. In a few simple but graphic lines he could show all the new ideas in connection with his operative work. There is no question that Dr. Kelly's genius for visualization and for sketching paved the way for his illustrators. He made it clear that the conception of a picture is the all important thing, not the plastic elaboration, the realism or the technical finish.

5. Another lucky factor was that Dr. Kelly let me study while working for him. Few employers would permit that. They want pictures for their money. I dissected and injected the pelvic and abdominal organs many times. No drawing was made by me without original study by injection, dissection, frozen section or reconstruction. When variations in adult forms puzzled the eye, the study of embryology gave the key. Many embryos and fetuses were injected, dissected, sectioned and studied. Had these studies been made for me by some one else, in order to save time, I would have benefited little; the finished dissection, injection or reconstruction would still in part have been an enigma to me. The eye and hand must work together to obtain the priceless information that automatically crystallizes into a mental image, which is the forerunner of the subsequent picture on paper. There is no other way, at least for the beginner.

If the artist has made sure of his ground, his drawing shows it. It is a truer, bolder, better picture and is done with greater speed.

6. Dr. Kelly also permitted me to help other illustrators while in his employ. He even encouraged this digression. This paved the way for subsequent teaching of professional illustrators, of art students, medical students and members of the faculty doing research work. There is no better way to learn a subject thoroughly than by teaching it to others. My first pupils, of course, were my friends Becker (1895) and Horn (1898), who came to assist me in the work for Dr. Kelly and his staff. I tried to teach them the fundamental principles of gynecologic illustrating but had little to give in those days. The job was not of my making; it was wished on me. The truth is, we learned together. I was rarely more than a jump or two ahead of them. Confession is good for the soul.

7. Thousands of pictures were made by the three of us to illustrate the various books and articles written by Dr. Kelly and his associates. Each book marked an advance in our method of approach and technic.

It should be stated here that Dr. Kelly also permitted us to make illustrations for other departments—those of anatomy, embryology, physiology,

pathology, surgery with its many sub-divisions, and obstetrics. This outside work retarded our regular illustrating, but Dr. Kelly invariably presented the pictures to his colleagues. This unselfishness broadened my field and ultimately led to the creation of the Art Department in March 1911. When Dr. Kelly's work ceased, I was tempted to go elsewhere. But my roots were deep in the ground and I was loath to leave Johns Hopkins.

8. This is where my friend Dr. Thomas S. Cullen came in. He had other plans. He had faith in our work, ideals and technic and wanted to keep them at Johns Hopkins. His dream was to create an art department in which the methods and technic which we had evolved during the wonderful Kelly period could be handed down to new generations of medical illustrators and spare them the years of trial and disappointment of their self-taught predecessors. . . .

I have described elsewhere in this paper how the Department of Art as Applied to Medicine came into being. Let me quote Max Brödel further:

The Art Department, 1911-1940

During the thirty years of its existence the art department has trained nearly two hundred medical illustrators, carefully chosen from thousands of applicants. There are no two alike. Each has his or her own individual style. I can nearly always tell who made the picture without seeing the signature.

Those who have taken the course are employed in the important medical schools and clinics of the United States and Canada. A few of them are abroad. Their work can be found in the medical literature, exhibits, hospital records, lantern slides and the like.

The size of the class varied from four to twenty-three regular students a year; the average was ten. Every year a few professional illustrators were admitted as post-graduate students for intensive study in a special branch, mostly technic. Members of the faculty and a limited number of medical students received instructions in drawing—the former as an aid in their research, the latter because of their interest in and talent for drawing and its obvious benefit in the study of medicine.

The instructions of the regular art students, the beginners, were as follows:

Since no illustration can be made without anatomic and histologic knowledge, the student begins in the dissecting room, doing the work with his (or her) own hands, slowly and thoroughly. Because each student can have only a few bodies to study from, while the range of variations is legion, daily lectures and demonstrations accompany and augment the dissection. A large transparent ground-glass plate covers life sized drawings of a skeleton, front, back and side views; also sections, properly co-ordinated. With charcoal and colored chalk these pictures can be altered before the student's eye to show variations in size, form and proportion due to sex, age or race; also physiologic, pathologic and postural changes, diseases and their course and operations; in brief, everything that concerns the illustrator. Each alteration requires

only a few strokes, which are erased when the alteration is demonstrated and another type drawn—and so on.

While the student dissects and studies the skin, the ground-glass plate explains its phenomena in a multitude of variations. Then are taken up the bony landmarks, fat deposits, vessels, nerves, lymphatics and their variations and significance; muscles, tendons, ligaments and fasciae. Then come the internal organs first in toto, then each organ separately with its variations and pathologic alterations.

Every structure and every organ is studied at the same time microscopically under low, medium and high power to give a complete picture.

The most important part of the student's work in the dissecting room, however, is sketching and drawing. Everything revealed by the student's eye and hand is put on paper immediately, while the impression is fresh. The sketches are made boldly and rapidly in black and colored crayons. Thousands of such sketches are made. They are the test that the student has grasped the subject.

They are valuable to him as forerunners of medical and surgical pictures. He has learned to study the subject in the form of pictures, not in words.

At the end of the year a recapitulation of the topography of the viscera is made by the study of frozen sections, sagittal and transverse.

Fresh material is employed, whenever necessary, to augment the studies on the cadaver and to correct post-mortem phenomena, alterations of form, consistency and color.

Many accessory methods are used to teach the student the correct approach to a problem in illustrating. It is always done in the form of pictures, either on paper, or on the ground-glass plate or on the blackboard; occasionally by graphic description, made alive by expressive gestures by the hands. Nearly every discussion terminates with a diagram; a question asked by an alert pupil may lead to the creation of a helpful topographic sketch sometimes startling in its originality. It is a stimulating habit to show the beginning, course and end result of a disease in an eloquent diagram. The medical literature can use more such pictures.

The student must also learn to make accurate, realistic pictures of objects placed before him. He must know how to pose and illuminate them so that their plastic rendition is simplified.

Much time in the class is given to this part of the training. No artist can create a picture unless he has first learned to imitate nature. Many pictures are made of fresh or hardened specimens from an operation or an autopsy, and most important of all, realistic pictures of operative steps.

Paralleling these studies are complete instructions in accurate draftsmanship and perfect technic. All important technics must be mastered in order to make the original drawing or painting acceptable to the author, to the engraver and to the publisher. Several new technics were worked out in this department and are taught to the students. The pen and ink technic is by far the most useful, because a line drawing costs less to reproduce and is not easily ruined by inferior press work.

Being thus equipped, the student is ready independently to plan and make

finished pictures for publication. After many failures a moderate degree of success may be attained; occasionally there is a gem, even a little masterpiece.

The superior work of a talented student is quickly noticed by instructor and fellow-students, then by members of the medical and surgical staff and then by visiting physicians. The student is asked to make drawings for them, which may start him on the way to getting a job.

Applicants

It is generally accepted that medical illustrating is an intricate, highly specialized form of art requiring for its mastery systematic full time study over a period of from two to four years or even longer, according to the talent, speed and preliminary training of the applicants.

They come from colleges, art schools and high schools. I have found that good material may come from any of these.

1. Some applicants are born artists with exquisite technic and a poetic temperament but entirely ignorant of the basic branches of medical science and for some reason quite unteachable.

2. Others have a college background with a fine grasp of the medical aspects of their studies but are awkward in drawing; their eyes and hands do not work together.

3. A rare group of applicants is gifted in science as well as in art.

4. The last group is without talent in either. The applicants of this group assert that they are fascinated by medicine and its dramatic service to humanity and want to help, but mere interest in the subject is not enough. However, there are even here notable exceptions.

The applicant may be a man or a woman. The best age is between twenty and twenty-four.

The qualifications in order of their importance are:

1. Keen interest in science, in nature and in all living things.

2. Ability to study intelligently, to observe accurately and to doubt the statements of authority.

3. Ability to draw and paint from nature free hand and with artistic charm.

4. Ability to visualize, to imagine a picture based on previous study and then give it reality on paper, either in contour alone or with convincing plasticity.

5. Technical skill in drawing, a trustworthy eye guiding an obedient hand, preferably the right.

6. Ability to stick to a task with tenacity and to be resourceful in the face of obstacles.

7. Good general health and normal vision.

Every medical artist worthy of the name realizes that he has to know the entire human body and the entire field of medical illustrating before he can discover the branch for which his special talent and his chief interest and inclination fit him best. A medical student does the same and for the same reason.

Moreover, in many institutions an illustrator has to serve several departments and be prepared to draw all types of pictures in every known technic.

An Evaluation of Max Brödel and His Amazing Work

Good illustrations are to a fine medical article what show-windows are to an outstanding department store. People walking along the street stop and look at the window display and then enter the store. So medical readers are attracted to an article by the fine pictures and then linger to scan the medical treatise.

When Mr. Henry Walters and I were considering the founding of the Department of Art as Applied to Medicine he wrote and said, "Tell me what you want." I promptly told him of what van Calcar, the famous artist, had done for medicine when he illustrated Vesalius' atlas on anatomy, and I pointed out what Brödel might do for the medicine of this generation.

I knew then of Max's wonderful qualifications but I had little idea that he would be the potent factor in the advancement of medicine in our generation that he later became.

The last seventy-five years have shown marvelous strides in inventions and in making things easier for mankind. We have the telephone, the radio, and recently the instruments helping those who are hard of hearing. Our trains are infinitely more speedy and more comfortable. Automobiles enable one to travel to all parts of the country quickly, and the airplane can take us to Europe in less than a day. I could mention many other important improvements but you know what they are as well as I do.

Let us see what has happened in medicine and surgery. We in the medical profession have, I am proud to say, kept pace with the steady advance in the other branches of human endeavor. Typhoid has, in large measure, disappeared. The deaths from pulmonary tuberculosis have been greatly reduced. Lockjaw when taken early has lost its horror; diphtheria, which caused so many tragedies in years gone by and which would frequently take two or three children out of a family within a week, can now be avoided if proper inoculation is carried out. The threat of smallpox can be eliminated where people have the good sense to be vaccinated, and most of them have.

Let us turn for a moment to what surgery has done in this period. Many tumors are successfully removed from the brain. Tumors of the neck are frequently taken away. The chest was formerly a forbidden area except where pus was to be withdrawn; now the chest wall is collapsed in cases of tuberculosis. A part of or an entire lung can be removed for malignancy, and in some cases the heart has been sutured

so that not only has the life of the patient been saved but also that of the person responsible for the stabbing. You are all familiar with the operations on the stomach, the gallbladder, the intestines and the appendix. The waterways in men and women have been carefully studied; kidneys can be removed, tumors of the bladder taken out, and untold thousands of American men who formerly became slaves to the use of the catheter, with its frequent inflammation of the bladder, can now have their prostates removed when they are in good condition and can go on living comfortably for many years. Then we have the youngsters with crooked arms and legs who become useful citizens when these members are straightened.

The time was ripe for Max. He came just as medicine and surgery were making greater strides than they had done in centuries and when many new illustrations were necessary. Max came to us fifty years ago. It seems but yesterday and I cannot help thinking of the Biblical quotation, "For a thousand years in Thy sight are but as yesterday when it is past."

Let us consider Max Brödel's qualifications when they had become fully developed.

1. He was a wonderful artist.
2. He was a fine anatomist.
3. He was a remarkable investigator.
4. He was an excellent teacher.
5. He was a lovable character, so much so that it was always a pleasure to grant his requests.
6. He was one of the country's outstanding pianists. I mention this because music was balm of Gilead to his soul.

Let us consider for a moment Brödel's friends. Howard A. Kelly was for years his Chief. Dr. Kelly during his lifetime did more for the advancement of gynecology than any other man who has ever lived. Franklin P. Mall was Professor of Anatomy and had the largest collection of human embryos in the world. Max had made drawings for Mall in Carl Ludwig's laboratory in Leipzig, and it was through Mall that he came to Dr. Kelly. Naturally, Brödel was given every facility in teaching his students anatomy in Mall's dissecting-room, and when Brödel wanted to study any embryological problem he was welcome to use this material which had been sectioned and was in excellent condition for study. Dr. William H. Welch had known Brödel in Leipzig and if Max wanted to do anything in the autopsy room he was at once given the opportunity.

Max, when he came to Baltimore, had a rather meagre knowledge of the English language, but he soon remedied that. In due time he grew to know Henry Mencken, one of America's greatest English scholars—a

man who can handle the English language just as skillfully as one of the best surgeons can wield a scalpel. For no one did Max have a deeper respect or affection than for Henry L. Mencken.

With the outstanding qualifications possessed by Max Brödel, with every possible help from the leaders in surgery, anatomy, embryology, pathology and English at his disposal, and with the advances in medicine and surgery coming along so rapidly, what else could one expect from Brödel but a phenomenal career? He was never idle, and when he played he really played.

If one wishes to see just what Max Brödel and his students have done, let him go to any of the leading medical libraries, pick out the outstanding medical journals and books of from fifty to one hundred years ago and put them in one pile, and then pick out the leading medical publications during the last fifty years and compare the two. This procedure will show the startling advances made in medical illustrating during the last fifty years. Max was largely responsible for this epoch-making improvement. He established a fine technic and set a very high standard.

Max Brödel was born on June 8, 1870 and died on October 26, 1941. During his span of life he revolutionized medical illustrating and placed it on a very high plane. His pioneer work in medical illustrating has already been of inestimable value to medicine and surgery, and the appreciation of his remarkable contribution will grow greater and greater as the years go by.

Although he left us in 1941 he still lives in his many drawings, in his many students, and in a personality that will be remembered as long as any of his old friends live.

Dr. Harry Friedenwald

Dr. Harry Friedenwald, Collector and Historian

By Arturo Castiglioni, M.D.

On October 21 the many pupils, patients and colleagues of Dr. Harry Friedenwald offered him congratulations on the occasion of his eightieth birthday. Some weeks before a book by him entitled *The Jews and Medicine* had been published in a beautiful edition by the Johns Hopkins Press; it bears witness to the indefatigable activity of a scientist who is at one and the same time a leading ophthalmologist, a scholar in the history of medicine, and a great bibliophile.*

I think that in order to appreciate the work of a bibliophile like Dr. Friedenwald it is important to know the history of his life and to be acquainted with his personality. The great charm of a private library lies, in my opinion, in the fact that it reveals to the scholar and the connoisseur who look with admiration, and sometimes not without envy, at its treasures the mind, the philosophy, and the peculiar preferences of its owner. There are splendid libraries which originate exclusively or chiefly in the passion for books as such, for rare editions, for the products of one or another of the most famous presses. There are other collectors who are guided by the desire to assemble the complete literature of an epoch or a subject, or all the books of a particular kind or by a particular author. Private libraries give us valuable evidence of the way of thinking, the achievements, and the tendencies of the men who devoted to them patient labor, long and sometimes difficult research work, and last but not least, a considerable amount of money. I may say that Dr. Friedenwald's library is an eloquent testimony of the life of a man who was absorbed by his professional duties but at the same time deeply interested in the history of medicine and in the contribution which Judaism has brought to the progress of medical science.

Graduated from Johns Hopkins University in 1884, Dr. Friedenwald received his medical degree from the College of Physicians and Surgeons in Baltimore in 1886. His post-graduate training was in Europe, chiefly under Professor Julius Hirschberg (1843-1925) a leader

* Dr. Harry Friedenwald has been for many years a supporting member of the Medical Library Association.

in ophthalmology and author of an authoritative and splendid history of ophthalmology in nine volumes which remains even today the classic work on this subject. It is certain that Dr. Friedenwald, who was for a long time Hirschberg's first assistant, learned from his teacher not only scientific and practical ophthalmology, but also the love for medical history to which the master attached such great importance. In 1890 Dr. Friedenwald returned to this country and became Associate Professor of Ophthalmology and Otology at the College of Physicians and Surgeons in Baltimore; he held this post until 1902, when he succeeded his father, Dr. Aaron Friedenwald, as Professor. When this medical school was absorbed into the University of Maryland he became Professor of Ophthalmology at the University of Maryland, holding his chair until 1929, when he became Emeritus. He received the degree of Honorary Doctor of Science at the same university in 1932, gave the honorary Doyne lecture at the Oxford Ophthalmological Congress in 1930, was President of the Section of Ophthalmology of the American Medical Association in 1931, and served as President of the American Ophthalmological Society in 1937.

He has conducted an exceptionally large clinical practice, now in its 55th year, and is acknowledged to be one of the wisest and most expert clinicians. He was a very skillful surgeon, but stopped operating when he was seventy. I think one can say without prejudice that he is considered one of the most excellent ophthalmoscopic diagnosticians and that he has won the esteem of scientists and practitioners in this country and abroad.

This is not the place to list his scientific publications. I would like to stress, however, the fact that he has always had a special interest in the ocular manifestations of internal disease. He was one of the first to recognize diabetic retinitis and made important contributions to its classification. His Doyne lecture on retinal arteriosclerosis is one of the modern classics in ophthalmology. He has many firsts to his credit, including recognition of optic-nerve affections in oxycephalus, and of the eye complications of arthritis deformans; and he was probably the first in this country to recognize tuberculosis as the cause of ocular inflammation; he also made important contributions to the classification of some forms of chorioretinitis. He was associated from the beginning of his practice with the Baltimore Eye, Ear and Throat Hospital, an institution which has through the years turned out a long series of competent ophthalmologists.

One of the most colorful clinical episodes in Dr. Friedenwald's career occurred in 1914 when he made a trip to Palestine and during a period of two months treated many thousands of cases of trachoma in the Jewish agricultural settlements by means of his travelling eye clinic.

Later on, in 1919, when he was in Palestine for six months as Chairman of the Zionist Commission, he played an important part in laying the foundation of the public health work and preventive medicine which Hadassah, the Women's Zionist organization, has since been successfully conducting in Palestine.

* * *

His recent book* gives a good review, I think, of the life and studies of the physician and the historian. It testifies to the author's interest in medical history and in the history of the Jewish people. It gives us a vivid picture of the evolution of Jewish medicine through the centuries, not in a series of biographies, but in a collection of essays, in which single figures of great physicians are outlined in masterly fashion and the story of the evolution of medical thought among the Jews is illuminated by the use of many documents, of biographical anecdotes, and of historical chronography. We find in the two volumes, which will always be a precious source for the research worker, an important chapter about the relation of the Jews and of Judaism to the medical art and some remarkable contributions on Hebrew medical literature. The experience of a learned bibliophile appears in the pages on the Hebrew medical manuscripts and incunabula. One of the most important parts of the book is the one dedicated to the Jews and the old universities: Montpellier, Padua, Bologna, Rome. A collection of biographical sketches written in a brilliant form with copious reference to unknown documents evokes the figures of these great Spanish doctors of the Renaissance who were physicians of princes and of Popes, learned humanists and skillful practitioners, explorers in the East Indies, philosophers who were no less acquainted with Aristotle than with the Bible, or even politicians, like Montalto at the Court of Maria de' Medici.

From the introduction about Jewish booklovers I should like to quote the words of Judah ben Saul ibn Tibbon, the "father of translators," who lived in Spain in the 12th century and left a will addressed to his son with an injunction concerning his library. I quote, "My son! Make thy books thy companions, let thy cases and shelves be thy pleasure grounds and gardens. Bask in their paradise, gather their fruits, pluck their roses, take their spices and their myrrh. If thou shouldst be satiate and weary, change from garden to garden, from furrow to furrow, from prospect to prospect, then wilt thy desire renew itself and thou shalt be filled with delight."

The bibliography of ancient Hebrew medicine seems to me the most complete up to date, and the essay on the Hebrew language and medical literature brings an important contribution to this subject.

In a series of essays, many of which had been previously published

* *The Jews and Medicine,* 2 vols. Baltimore, Johns Hopkins Press, 1944.

in medical historical journals, Dr. Friedenwald has traced the history of Jewish medicine in a complete and outstanding way. This history, brilliantly written, is rich in interesting and original observations about the conditions of life of the physicians whose biographies are contained in the book; we read of their experiences, their hopes, their illusions and their often tragic end.

An important part of the book is dedicated to the relations of the Jews to the medical art and especially to the ethics and the practice of medicine among the Jews. Amatus Lusitanus, a man of deep humanity and vast knowledge, who made an important contribution to the knowledge of syphilis, is one of the most interesting scientists who come alive in the pages of this book. No less important is the essay on Andrea Laguna, who was the physician of Popes Paul III and Julius III; he wrote a life of Galen and was the first courageous opponent of the age-old views of witchcraft. He was born in Segovia in 1499 and died in 1563.

It is impossible to give here a substantial report of Dr. Friedenwald's book: only the attentive reading of it can give an idea of its historical importance. I believe that not only the medical historian and the physician, but any cultivated man interested in the history of civilization will find it very attractive reading. It could have been written only by a man inspired by a great desire for research and guided by a deep knowledge of the history of the past and of its documents.

* * *

An interest in the history of medicine among the Jews was awakened in Dr. Friedenwald by an address delivered by his father, Dr. Aaron Friedenwald, in 1896, on Jewish Physicians and the Contributions of the Jews to the History of Medicine. This was also the beginning of Dr. Friedenwald's love for historical research and for ancient books and monographs. It was the beginning of a library of Medica Judaica, a unique collection aiming to illustrate the history of medicine among the Jews. Dr. Friedenwald has followed his purpose rationally and systematically, searching for the rare manuscripts, for the best prints, for little-known works of forgotten authors. He has reconstructed the work of the Jewish hygienists who first brought about legislation against the spread of contagious diseases. Among the most precious treasures of the Friedenwald library there is a codex of the 13th or early 14th century which contains several chapters of Asaph Judaeus, the earliest Hebrew medical writer, who may have lived as early as the seventh century, or as late as the eighth. Another precious manuscript of the library is a codex by Sabbato Donnolo, an almost legendary Italian physician who lived in southern Italy in the 10th century and was well known as the author of a mystical book on the creation. This manuscript, which is

bound with the one of Asaph, is a primitive herbal containing the description of 120 medicinal plants and their properties. Donnolo was the physician of Saint Nilus, Bishop of Rossano. A thirteenth century manuscript contains an important collection of eleven Arabic medical tracts in Latin translation.

With the introduction of printing, one of the first Arabian authors who became popular was Constantinus Africanus, who made many Arabic works accessible to European scholars. Among these translations one of the most important was the Dietetics of Isaac ben Solomon Israeli, who was born before 850 and became court physician to the Caliphs in Kairwan. The first edition of 1487 and the fine edition of 1515 are, together with many other precious manuscripts and early editions, among the treasures of the library. A manuscript copy of the Dietetics, delicately executed in a 14th century hand, reveals in what high value the book was held.

It is easy to understand that in such a collection the works of Maimonides would play an important role. Maimonides was born in Cordova in 1135; he went into exile in Egypt, where he practiced medicine and became physician at the Court of Saladin. Maimonides' work is an important land mark in the history of Mediterranean thought; he was the first to attempt a conciliation of Biblical and Arabian philosophy. His medical and philosophical works were written in Arabic and soon translated into Hebrew and into Latin. The Friedenwald library possesses a manuscript codex of the middle of the 15th century containing six short treatises of Maimonides in Latin translation and also some portions of Avenzoar. One of these treatises is the *Regimen Sanitatis* dedicated to the Sultan Al-Afdal. Another is the book on poisons and antidotes, written at the request of the Grand Vizier. One of the most splendid of all incunabula is the Canon of Avicenna, published in Naples in three volumes in 1491; the copy in the Friedenwald library is in perfect condition, and with it there are a great number of Hebrew manuscripts. The most important translation of Arabian authors is the work of Rhazes in two volumes, published in Brescia in 1486. The author of the translation was a very famous physician, Faraj ben Salim of Girgenti, court physican to Charles of Anjou, King of Naples.

Jewish physicians of the Middle Ages made a very important contribution to astrology. We find in the library rare editions of the books of Mashallah (770-820), an Egyptian physician whose work on the Astrolabe was the basis of Chaucer's treatise. There is a precious copy of the Almanach written by the Jewish physician Zacutus the Elder at the end of the 15th century: Columbus carried a copy of it in his voyage. We find a fascinating work of Bonet de Lates, who was physician to Pope Alexander VI and later to Leo X and published in 1493 a descrip-

tion of an astronomic ring. The colophon, in which he dedicates the book to Pope Alexander, is interesting. Regretting his poor Latin, he ends with the plea "Be lenient, you who find some Latin flaw, not Latin I profess, but Hebrew law." It is important to observe that all the most important astronomical tables of the Middle Ages were at least translated or compiled with the help of Jews; in the most important cases, according to Cecil Roth, they were entirely of Jewish authorship. It is interesting that the Jewish writers gave the greatest importance to the measurements of the celestial bodies and the instruments used for their determination. Maimonides had denied any value to astrology, and his authority carried the greatest influence.

Among the most important works of the Renaissance we note the *Summario sobre las pestiferas bubas* by Francisco Lopez de Villalobos, who was court physician to King Ferdinand and later to the Emperor Charles V. The book was published in 1498 and translated into English in 1870 by George Gaskoin. It contains a clear description of the venereal etiology of syphilis, its primary and secondary symptoms.

In the medical Renaissance Jewish physicians of Italy, Spain and Portugal took an active part. Among them Amatus Lusitanus played a paramount rôle. He was one of the first to discover the valves of the veins and endeavored to find an explanation of their functions. Amatus's main work was a seven-volume collection of medical case histories with commentaries and discussions; each volume containing one hundred cases was called a *Centuria.* The book had a great number of editions and was widely quoted for several centuries. A fine copy of the first edition is included in Dr. Friedenwald's library.

Among the other physicians of the Renaissance whose works are preserved in this library we may cite some of the most outstanding. An Italian Jewish physician, Jacob Mantino, born in Spain in 1490 and brought to Italy as a child, studied medicine at Padua and Bologna and later became physician to Pope Paul III and instructor at the University. He was one of the learned men consulted on behalf of Henry VIII in his effort to have his marriage with Catherine annulled on the ground that it was contrary to the Biblical law. His translation of part of Averroes and Avicenna was highly esteemed.

The most famous of the Portuguese physicians here reported is Garcia da Orta, who was born in Portugal at the end of the 15th century, studied medicine in Salamanca, and became professor at Lisbon. He sailed to India in 1534; there he practiced medicine and pursued his studies of the medicinal plants of that country for over thirty years. His book *Coloquios* was published toward the end of his life and in a new edition in two volumes in 1891-1895. A good English edition appeared in London in 1913.

David de Pomis, born in 1525, was physician to Popes Pius IV and Sixtus V; he is the author of the interesting work *De Medico Hebraeo Enarratio Apologica,* which is a splendid defense of the Jewish physician. An exemplar of this rare book is among the treasures of Dr. Friedenwald's library, in which there is also to be found a copy of the famous Bull of Pope Gregory XIII (1584) against the Jewish physicians. An interesting item is the diploma given to a Jewish graduate from Padua in 1695, in which the common superscription is altered to *"In Nomine Dei Eterni"* and the date is given as *currente anno.*

The *Archipathologia* by Felipe Montalto, a Portuguese physician who became physician to Queen Maria de' Medici in Paris, was published in 1614, attracted a great deal of attention, and was frequently cited by contemporary authors. An interesting autographed letter of Montalto which reports to the Queen on the condition of two of the princes, and a document signed by him which is a lease of his dwelling property, contribute to the biography of this famous physician; he died in 1616 when he accompanied the royal family to Bordeaux to celebrate the marriages of King Louis to Princess Anna of Spain and of Louis's sister, Elizabeth, to Philip IV of Spain.

Another rare book is the treatise on diseases of women by Rodrigo de Castro, born in Lisbon in 1546. This book was published in Hamburg in 1603 and had eight editions in the 17th century.

In a library in which all great Jewish physicians of the past are extensively represented, Abraham Zacutus Lusitanus, the great-great-grandson of the famous Abraham Zacutus, author of the Almanac, plays an important part. He published a voluminous work containing "The history of the great physicians, being all the medical histories of internal diseases which are scattered in the work of the foremost physicians, etc." The *Opera Omnia* of Zacutus, who died in 1642 in Amsterdam where he had practiced with great distinction, were published five times between 1642 and 1694.

Among the great physicians of the 18th century we may mention Jean Baptiste Silva, born in Bordeaux in 1682. He was physician to King Louis XV and later to the Emperor Charles VI. He also was physician to Voltaire, who presented him with a copy of his poem *La Henriade* with a beautifully autographed inscription. A very interesting paper is the Memoir which was presented to the Royal Academy of Sciences in Paris in 1749 by Jacob Rodrigues Pereira; Pereira was born in Spain in 1716, escaped from the Inquisition, and settled in Bordeaux. He devoted himself to the study of deaf mutes, and his *Memoir* is a pioneer work on their education.

I have tried to cite only a few of the rare books which are contained in Dr. Friedenwald's library, but I must add that the collection of works

by Jewish physicians of all times is surely the most complete which exists today. A great number of documents, of autographs, of prints and of medals illustrates the life of Jewish physicians throughout the centuries and contributes in a remarkable way to the history of the struggle and persecution which endangered their lives and made their scientific activities very difficult. From this point of view Dr. Friedenwald's library is an invaluable source for the historian who is interested not only in the history of the development of medical thought, but also in the history of civilization and of the racial prejudices which so often arrested the flourishing development of scientific research.

In the first chapter of his book Dr. Friedenwald quotes the saying of Rabbi Judah b. Samuel ha-Hasid of Ratisbon, who lived in the 12th and the early part of the 13th century and was a great book lover: "One should ever be on his guard to hold books in proper honor and respect. One dare not lay a pen or coin or anything else in a book for safekeeping; not even to have them handy dare one lay a pen or a knife upon a book. Nor should one use a book to shade oneself from the sun nor to protect oneself from smoke, nor as a cover for any object. Nor to hide anything placed under it." He quotes also a passage from Ben Mi̱shle (993-1055): "Never refuse to lend books to anyone who has not the means to purchase books for himself, but only at first to those who can be trusted to return the volumes, and withhold not good from whom it is due."

These words, which express a great and tender love for books, are the best expression of the feelings which guided Dr. Harry Friedenwald in his collection. In these days of war, when great cultural values are destroyed and the Jewish people suffer terrible persecutions, this great library is a precious monument of the contribution of the Jewish people to the progress of science. At the same time the collection, which is preserved in the fine house on Eutaw Place in Baltimore, is the most valuable biographical testimony of the life of a great scholar, of a learned physician and of an able man who has spent his life searching in science and in history for help and comfort to all those who are suffering.

Art and Science in a Health Museum

By Bruno Gebhard, M.D.

A museum was, according to Webster, originally a "Temple of the Muses, hence, a place of study." The history of museums is a long one. Ptolemy I, one of Alexander's field marshals and satrap of Egypt, is usually credited with creating and equipping the great institution for literary and scientific studies, the "Museion," in the city of Alexandria. Alexander the Great is cited by the Encyclopaedia Britannica as the one who founded and endowed (!) this "Museum" and the equally famous library. Alexander was not in a position to spend too much time in establishing the "Museum." He founded the city named after him in 332 B.C., while leading his army from there to India, and died eight years later.

The intellectual father of the first "Museum" was really Alexander's teacher and mentor: Aristotle started out as a physician, as his father Nicomachus, who was a physician to King Philip of Macedonia. It seems that Aristotle did not get any satisfaction out of his father's profession for, after becoming of age, he went to Athens where he studied under Plato. King Philip called Aristotle back as teacher for Alexander, but after some time, he returned to Athens, opening his own school in the gymnasium of the Lyceum (335-332). Aristotle's great abilities as an organizer of scientific research are well known. Less well known is his successor Theophrastus, who made the school at the Lyceum the center of all scientific research. After this pattern, to quote Charles Julius Beloch, "the Alexandrian Museum was founded, where the Aristotelian way of studying found a permanent place after the school in Athens was closed."[1]

The first museum must have had a very rapid growth. None less than the statesman and scientist Demetrius of Phalerum (350-285 B.C.) who was administrator of the still flourishing Athens, was called in the year 300 B.C. to Alexandria to reorganize and to direct the museum and library. Herophilus and Erasistratus are the best known medical practitioners and scientists of those days. There are unfortunately no records preserved of the specimens and exhibits of that museum, but

we know of the detailed anatomical studies of both Herophilus and Erasistratus. Since the art of embalming was highly advanced in Egypt, the knowledge of human anatomy was greatly increased. F. L. Pagel credits the school of Alexandria with recognizing the brain as center of the nervous system and as the connecting link between the senses and motion, and the testes as producing the semen.

The Renaissance of Museums

There was no continuous development of Museums after the establishment of the one in Alexandria. Many centuries later the Renaissance brought a revival of the Museum idea. Along with the rediscovery of the Greek and Roman classics, the increase in scientific research, and the exploration of the world and the universe goes the establishment of universities, libraries and museums. In addition, the European princes, mainly Italian and German, competed in setting up art galleries and coin collections, collecting foreign animals, and building botanical gardens and parks. The most outstanding ones were those of the Medici in Florence, of the Electors in Saxonia (Dresden Zwinger) and of the kings of France (Louvre).

In the English speaking world, it is usual to refer to the "Ashmolean Museum at Oxford" (1683) as one of the first museums of the western civilization. Its collection was definitely limited in its use to the members of the university, as was the case with the British Museum (opened 1753) in its earlier days. Nothing illustrates this better than the following paragraph from the *British Museum Manual* for 1793: "Students and curious persons desirous of visiting the Museum are instructed to apply in writing to the principal librarian, stating their names, conditions and places of abode, also the day and hour when they wish to be admitted. If the librarian considers the applicants suitable persons, he will allow the porter to give them tickets when they come the second time to ask for them, but not more than ten tickets will ever be given out for each time of admission and visitors will be allowed to remain only one hour in each department."

Science for the People

The early beginnings of museums in this country cannot be separated from the development of libraries. Lawrence Vail Coleman states, "In 1773—three years before the State House Bell in Philadelphia became the Liberty Bell—the library society of Charles Town, 'taking into consideration the many advantages and great credit that would result,' had set out to collect materials for a full and accurate natural history of the province of South Carolina and had fitted up a *public* museum—the first in this hemisphere, thriving now as the Charleston

Museum."[2] Dr. George Gaylord Simpson in "The First Natural History Museum" claims that Philadelphia was the seat of the first public museum, the "Cabinet" of the American Philosophical Society being in existence already in 1770.[3] Not very much happened in the Museum world up to 1873. Since then, public museums have been developed here unsurpassed in number and quality by those of any other country with the possible exception of Russia. There are about 2,500 museums in this country of very different types: small historical "house" museums, children's and university museums, trailside museums and company museums, industrial museums, and in great numbers museums of natural history and of the arts and sciences. Annually about 50 million people visit museums in the United States.

The newest type of Museum is the health museum. There have been medical museums for a long time, the outstanding one being the Army Medical Museum, Washington, D.C., founded in 1865. The emphasis in medical museums is on collections and research. To study war wounds was the original purpose of the Army Medical Museum. The emphasis in a health museum is on visual education by exhibitions, lectures and other means. It presents in popular version the advances made in medical and health sciences, thus promoting personal health and community hygiene. Medical museums feature diseases; the aim of health museums is to have better health for more people, and health is understood as the state of being physically and mentally "At-Ease," the opposite of dis-ease.

We do not think that medical museums should close their doors to the public. It is not always and only "morbid curiosity" but a quite natural curiosity about the human body and its diseases which brings people into a medical museum. Arthur H. Bulbulian, the director of the Mayo Foundation Museum of Hygiene and Medicine, has brilliantly demonstrated how the medical artist mainly with the help of colored models can achieve a high grade of educational display.[4]

Some of our Science Museums

Some of our science museums have medical and health exhibits. The most outstanding collection is at the Chicago Museum of Science and Industry; it occupies thirty-five thousand square feet of floor space. The allied professions of pharmacy and dentistry are well represented.[5] The United States National Museum, better known as the Smithsonian Institution, has had health exhibits since 1922. It started out as a "hygiene and sanitation collection" but has in recent years included many new items on the progress of modern medicine.

Just as the modern librarian is more than a collector, conservator and distributor of books, modern museums try to avoid being curio cabinets

or mausoleums of specimens. A modern museum aims, according to Hutchins, to be "an integrated part of an educational system dedicated to teaching men how to live human lives and how to live them together on a world-wide basis."[6]

Health museums have the public health movement as their father and the idea of preventive medicine as their mother. Neither parent can make any real progress without public health education. A good doctor has always been a health teacher to his patients, as his name indicates literally. The problem of today is that of reaching large groups and entire communities. Even before World War II there was an increasing interest in health matters in all sections of the American population. This is the age of science, and medical science has always had a most personal appeal for the layman. The application of medical science is an art, and it was natural that medical information and health education should turn to visual means in presenting their facts and figures.

As the public health movement originated in England, it is only natural that that country should have opened the first Museum of Hygiene. This was dedicated in London on June 28, 1875 to the memory of Admiral Alexander Parkes, former Professor of Hygiene at the Army Medical School, and was named the Parkes Museum of Hygiene. It is still in existence, located at the Royal Sanitary Institute, but its value now is mainly from an historical point of view. The directors of this museum organized an International Exposition of Hygiene and Medicine, London, July 16-August 13, 1881. The exhibition found only meager response, but three years later London saw another "International Hygiene Exhibition" from May 8 to October 30. More than four million people visited the exhibits, which were closed on Sundays. The purpose of the exhibition was to show "the relationship of nutrition, clothing, housing, education and work to the conditions of a healthful life, and to inform the general public with the institutions of formal and informal education." Not less than nineteen volumes were published under the title "The Health Exhibition Literature," by William Cowles, and Sons, Ltd., London 1884.[7]

In this country, the American Medical Association has shown medical and health exhibits on many occasions since 1915. Previously, in 1911 at the International Hygiene Exhibition in Dresden, a very elaborate health exhibit was made an essential part of the program. The human organism and its care were presented to the public: five and one-half million people visited the exposition in a few months. There was an extensive exhibit on the history of medicine with great emphasis on Greek and Roman reconstruction models of sanitation and personal health, under the personal supervision of the great Karl Sudhoff. The

exposition was financially successful, and with the help of a German industrialist, K. A. Linger, there was established in 1912 the German Hygiene Museum in Dresden, incorporating the best pieces of the International Hygiene Exposition. Epidemics and starvation in the years following World War I called for quick and effective mass-health education. Travelling health exhibits and permanent health museums were used extensively in Germany, Russia, Poland, Czechoslovakia and Yugoslavia.

This country did not feel the immediate need of a human conservation program, and exhibits on human biology were not thought of as proper. However, in 1933 biological exhibits were displayed in the Hall of Science at Chicago's Century of Progress. The Medicine Shows of rural communities and "Anatomical Museums" of the quacks which exploited the fearful and the ignorant by playing upon "morbid curiosity" were replaced by scientific exhibits presented in a good and artistic way.

C. E. Cummings in his book *East Is East and West Is West* says that one of the most important results of the Medical and Public Health Exhibits during the New York World's Fair (1939-40) was in the direction of breaking down taboos in the matter of human reproduction. Ignorance is no longer looked upon as bliss, and ignorance in health matters, including those of reproduction, is a personal injustice which can easily become the source of harm and even of crime. As it was my privilege as technical consultant to plan and design most of the New York World's Fair exhibits, it was indeed gratifying to see seven and a half million people visiting the exhibits. The success of the health exhibits of the Chicago Fair and New York World's Fair had encouraged several groups to plan for a permanent exhibit. Already in December 1936 a group representing the Academy of Medicine of Cleveland and the Cleveland Health Council had incorporated "The Cleveland Museum of Health and Hygiene," and in New York City an American Museum of Health was incorporated in 1937. This New York group was responsible for the New York World's Fair Exhibits but has postponed its museum plans till after the war. The Cleveland Health Museum was opened to the public on November 13, 1940 and is referred to in the 1944 *World Almanac* as "The first of its kind on the Western Continent."

"Health Museum" is a new compound word which accounts for the skeptic's question "Do they put all the health that is left in the city into museums' show cases?" We realize the disadvantages in using the word "Museum," which for so many people sounds much like "Mausoleum." On the other hand, museums are recognized as places where one can get unbiased information, where nobody tries to sell anything other than

the truth, and where there is something to look at. The chance to look at the real thing makes the museum a unique institution. People have heard they have a heart, a brain, but very few ever saw one. The power of visual impression has been stated best by Tennyson in "Enoch Arden" —"Things seen are mightier than things heard."

A health museum could rightly be called a "Museum of Man." Museums of natural history in this country have up to now very hesitatingly displayed biological data. An Egyptian mummy and a collection of skulls and bones are usually about the only items on display. Walt Whitman was at least a hundred years ahead of his time with his poem chanting the place of exhibitions and museums in his dream of America:

> Mightier than Egypt's tomb
> Fairer than Grecia's, Roma's temples
> Prouder than Milan's statued, spired Cathedral,
> More picturesque than Rhenish castle-keeps,
> We plan, even now, to raise beyond them all,
> Thy great Cathedral, sacred Industry—no tomb,
> A keep for life for practical Invention. . . .
> In large calm halls, a stately Museum shall teach
> you the infinite, solemn laws of Minerals:
> In another, woods, plants, vegetation shall be
> illustrated: in another Animals,
> animal life and development.
> One stately house shall be the Music House,
> Others for other Arts—Learning, the Sciences
> shall be all there:
> Somewhere within the walls of all,
> Shall all that forwards perfect human life
> be started,
> Tried, taught, advanced, visibly exhibited . . .[8]

Health museums are concerned with the human estate of an entire community. They are not limited to helping the sick and the poor. They offer many sources of information to all groups of people: for the industrialist as well as the business man, for the engineer as well as the architect, for the teacher as well as the preacher. Parents may find help on how to raise their children, and children on how to grow up and like it. A museum makes people come, stop, look, listen, and last but not least, it makes them remember better what they have learned when the occasion comes for practical application.

What does a health museum look like? "The Transparent Man" has become the symbol of the health museum movement all over the world. This is what a reporter once wrote about him: "He is truly a many-sided personality but no sinister Machiavellian tendencies here! A woman

can see right through him. Six feet tall, blond, with beautifully molded muscles, well poised he rotates half a dozen times on a narrow table, twenty electric lights in sequence illuminate the main organs of the body, explained by a recorded lecture." There are three "Transparent Men" in this country: one at the Medical Museum of the Mayo Clinic, one at the Science Museum in Buffalo and one at our Museum (Fig. 1) on a loan from the American Museum of Health, New York. A "Transparent Woman," the so-called "Camp Woman," is sponsored by the S. H. Camp & Co. and is on display at the Chicago Museum of Science and Industry. All these are copies of the original "Glaeserner Mensch" (Glass Man) of the German Hygiene Museum, Dresden, whose curator I happened to be until 1937. The Transparent Man is a characteristic example of blending art and science, of the Greek classic and the modern technical development. The form is more than 2,000 years old, taken from the statue "Praying Boy" created by Boedas, son of Lysippus, 400 B.C. (Fig. 2). This statue was once in the possession of Frederick the Great.

A giant enlargement of the statue greeted the visitors in the entrance hall of the exhibition "Man" in 1911. At that time attempts were made to blow such a figure out of glass in order to make visible the shape and location of the fundamental organs of the body, but these attempts failed. Life size X-Rays, photographs and "transparent specimens" of parts of human organs, showing especially the blood supply, were only poor substitutes. In the late twenties the so-called plastic materials came into use and experiments started again. An old dream then came true of making visible in the most natural way the insides of the human body. After nearly three years of experiments, a team of technicians and museum men, of which I happened to be one, finally created the Transparent Man who had his first appearance at the opening of the second International Hygiene Exposition in Dresden, 1930. Since then between fifty and sixty million people have admired his two brothers and one sister in Europe and in the United States.

What is the secret of this success? Knowledge which for centuries was withheld from people is now available at a glance. Keeping the figure life-size helps people to realize that what they see is like the inside of themselves. The twenty organs are rebuilt in all their anatomical details and in natural color, the skeleton is a real one, the main blood vessels are reconstructed as naturally as possible. The Transparent Man not only gives much desired knowledge but also enriches the visitor in his aesthetic values.

If the real aim of education is more to arouse curiosity than to satisfy it, we know that the Transparent Man has done this with his millions of onlookers. Many of them agree with the quotation of St.

Fig. 1 (*left*). "Transparent Man" at Cleveland Health Museum (courtesy American Museum of Health) modeled after "Praying Boy."
Fig. 2 *(right)*. Bronze statue "Praying Boy" by Boedas, son of Lysippus, 400 B.C. (Photo, Cleveland Art Museum)

Augustine inscribed around the Transparent Man: "Man wonders over the restless sea, the flowing waters; The sight of the sky, and forgets that of all wonders Man himself is the most wonderful."

Other exhibits deal with man's hand and man's head. A regular clock-like rhythm catches the ear of the visitor in the room devoted to man's heart. The Museum's clock has not sixty seconds, but seventy heart beats to the minute. Looking at the large size heart which flashes a beam of light at every tick, a visitor remarked, "It makes you think." Visitors may operate many of the displays; they may make their own finger print cards, test their lung capacity or the strength of their grip, peek into a lens to see what the inner ear looks like, or dial a machine to find out what their life expectancy is (without guarantee). Question and answer games are played at the exhibit "Food Facts and Fallacies" to find out, for example, whether or not fish is a brain food. Special exhibits bring timely subjects such as "Health in Wartime Britain," or deal with community affairs such as the exhibition "100 Years of Medicine" (Fig. 3), an exhibit in commemoration of the centenary of the School of Medicine, Western Reserve University, which was a co-operative venture of the Western Reserve Historical Society and the Museum of Cultural and Historical Medicine of the Cleveland Medical Library Association. An auditorium is used for lectures, for expectant mothers' classes and for the showing of health films. Workshops design and construct exhibits for our own use and for many other organizations. A twenty-one unit exhibition "Alimentos Para La Salud" (Food for Health) constructed for the Mexican Government was one of the outstanding ones.

Loan exhibit material is available for schools, colleges, and libraries in and outside of Cleveland.[9]

A Health Education Reference Library collects photos, pamphlets, magazine articles, and newspaper clippings; it also includes a poster collection of about 1,500 items. The Museum publishes its own *Museum News*. We hope in the near future to develop a special library on popular health and "doctor" books. Librarians are aware of the fact that the printed word, since the first days of movable type, has played an important rôle in popular health education. Next to the Bible, pamphlets on protection against the plague and other diseases make up the main core of early printing. The famous "Regimen Sanitatis Salernitanum" written in the thirteenth century had, up to 1846, not less than 240 printed editions.[10] A collection of historical health books would give good material for the study of health habits and customs of the many nationality groups of this country.

Seen from the viewpoint of informal education, especially adult education, libraries and museums have much in common. Goethe's

Fig. 3. Special Exhibit—100 Years of Medicine (Photo Cleveland Health Museum)

saying, "We see only what we know," is still true, and books are still very important aids in education. To learn from a book is good, but to see for yourself is better.

REFERENCES

1. BELOCH, CHARLES JULIUS. Propylaen Weltgeschichte. II, p. 559.
2. COLEMAN, LAWRENCE VAIL. The Museum in America. Washington, D.C. 1935. Vol. I, p. 63.
3. SIMPSON, DR. GEORGE GAYLORD. Science, Vol. 96, 1942. No. 1, p. 261.
4. BULBULIAN, ARTHUR H. The Organization of a Medical Museum for the Public. Bulletin of the International Assoc. of Medical Museums. Oct. 1936. XVI, pp. 18-26.
5. HULL, THOMAS G. Health Museums, Hygeia, August, 1941.
6. HUTCHINS, ROBERT MAYNARD. Science. Vol. 58, 25/43.
7. TIETZE, FELIX. Hygienischer Wegweiser, March, 1930, p. 149.
8. PARTRIDGE, BELLAMY. Unpublished manuscript read at the opening of the 40th Annual Fair of the American Institute, "The History of the American Institute." Quoted in "The Museum and Popular Culture" by T. R. Adam, New York, 1939, pp. 12-13.
9. GEBHARD, BRUNO, M.D. Community Health Education by the Medical Profession (from Medicine Show to Health Museum) to be published in *Journal A.M.A.*
10. FISCHER, ALFONSE. "Geschichte des deutschen Gesundheitswesen" Vol. I, Berlin, 1933, p. 190.

The Use of Research Publications in Mental Disease

By George L. Banay

For a considerable period of years, the Commonwealth of Massachusetts, with the aid of grants from the Memorial Foundation for Neuro-Endocrine Research and the Rockefeller Foundation,* has maintained an elaborate Research Service at the Worcester State Hospital to investigate the various aspects of *dementia praecox,* the most-prevalent and most baffling of all mental disorders.

The Research Service was organized in 1927,[1] and soon after reports of the investigation started to appear in the medical periodicals. After twelve years had elapsed, it seemed possible that a survey of references to the research work might yield results interesting and valuable enough to warrant the time and effort involved. Inasmuch as the reports had been distinctly varied in character—some purely descriptive, some dealing with general biological topics and still others presenting detailed biometrical analyses—it was hoped that a survey would indicate which type of presentation was most likely to attract the attention of other investigators. In this expectation it was decided to check the references to the Worcester articles for a period of ten years.

METHOD

In 1927 Gross and Gross[2] devised a method of obtaining what may be regarded as a *group judgment* by a large number of scientific writers in a given field of investigation by tabulating the number of references during a limited period in one or more representative journals of a particular scientific field of inquiry. They have applied this method to the selection of *chemical periodicals.* In subsequent years other studies have appeared dealing with *mathematics, electrical engineering, medicine, dentistry, endocrinology, etc.*[3]

This simple statistical method has been employed in our survey. Judging the relative value of an article from the frequency of its quotations we are assuming two postulates:[4]

1. That the value of an article to professional workers is in *direct*

* The Rockefeller Foundation terminated its grant in 1943.

proportion to the number of times it is quoted as a reference in relevant publications, and

2. That the representative journals selected give a *correct view* of the relative use of technical articles by research workers.

For our purposes it seemed to be the best plan to select representative journals in the field of:

1. Neurology and Psychiatry
2. Psychology and Psychoanalysis
3. Physiology and Biochemistry
4. General Medicine

By necessity the periodicals selected were mostly American publications, but a few representative British, French, German and Scandinavian journals were included to round out the scope of the survey.

A score-sheet was set up listing all periodicals selected and all articles published by the Research Service for the period 1929-1938 inclusive. The publication date (including the month) of the article was marked on the score-sheet, and the date of each reference was recorded so that the time-lapse could be calculated at a glance.

All issues of the selected periodicals bearing a date after January 1, 1930, and prior to July 1, 1939, were examined. Exceptions to this were the *Biochem. J., Lond.* and *Klin. Wschr.,* which were started with the 1934 volumes. (Neither of them had any references anyway.)

The following limitations of the survey were established:

1. Reports, lectures and abstracts appearing in the literature were not included in the list of publications.
2. Reviews of literature, reports of proceedings of societies, book reviews and other short notices in the journals were not checked. Review journals, however, were included in the list of periodicals, but abstract journals were not.
3. Bibliographies of the original articles of the Worcester State Hospital were not scored, as it was felt that the heavy percentage of local references might lead to misrepresentation in the final numerical summary.

The 134 articles published in the ten-year period were distributed as follows:

1929	5	1934	21
1930	3	1935	15
1931	3	1936	17
1932	5	1937	25
1933	11	1938	29

The journals selected, the volumes checked and the number of references found are given below in Table I.

TABLE I

Journals		*Vols.*	*References*
1. *Psychiatry and Neurology*			
Acta psychiatr. neur. Kbh.	vol. 5-14, 1930-39	10	4
Am. J. Orthopsychiat.	vol. 1-9, 1930-39	9	4
Am. J. Psychiat.	vol. 9-13, 91-95 and Supplement, 1930-39	11	53
Ann. méd. psychol., Par.	vol. 88-97, 1930-39	10	—
Arch. Neur. Psychiat., Chic.	vol. 23-41, 1930-39	19	13
J. Ment. Sc., Lond.	vol. 76-85, 1930-39	11	39
J. Nerv. Ment. Dis.	vol. 71-89, 1930-39	19	8
J. Neur. Psychopath. Lond.*	vol. 11-17, 1930-37	7	10
J. neur. psychiat. Lond.	vol. 1-2, 1938-39	2	
Psychiat. Q.	vol. 4-13, 1930-39	10	16
Riv. pat. nerv.	vol. 35-53, 1930-39	19	5
Zschr. ges. Neur. Psychiat.	vol. 131-166, 1930-39	35	6
		162	158
2. *Psychology and Psychonalysis*			
Am. J. Psychol.	vol. 42-52, 1930-39	11	9
Brit. J. M. Psychol.	vol. 1-18, 1930-39	9	2
Brit. J. Psychol.	vol. 20-29, 1930-39	10	—
J. Abnorm. Psychol.	vol. 24-34, 1930-39	11	7
Psychoanal. Q.	vol. 1-8, 1932-39	8	2
Psychol. Bull.	vol. 27-36, 1930-39	10	9
Psychol. Rev.	vol. 37-46, 1930-39	10	2
		69	31
3. *Physiology and Biochemistry*			
Am. J. Physiol.	vol. 91-126, 1929-39	36	8
Annual Rev. Biochem.	vol. 1-8, 1932-39	8	7
Biochem. J., Lond.	vol. 28-33, 1934-39	11	—
J. Biol. Chem.	vol. 85-128, 1929-39	44	1
Physiol. Rev.	vol. 10-19, 1930-39	10	1
		109	17
4. *General Medicine*			
Am. J. M. Sc.	vol. 179-197, 1930-39	19	4
Arch. Int. M.	vol. 45-63, 1930-39	19	2
J. Am. M. Ass.	vol. 94-112, 1930-39	19	10
Klin. Wschr.	vol. 13-18, 1934-39	11	—
Lancet, Lond.	vol. 218-236, 1930-39	19	3
N. England J.M.	vol. 202-220, 1930-39	19	5
		106	24
Totals:			
29 periodicals		446	230

* Title changed in 1938.

RESULTS

Four of the periodicals were found to contain no references to the Worcester papers. Thus, all the quotations noted were distributed in 25 periodicals. The greatest percentage of the articles being related to psychiatric problems, the leading psychiatric journals were found to contain the greatest number of quotations, as tabulated below:

J. neur. psychiat., Lond.	10
Arch. Neur. Psychiat., Chic.	13
Psychiat. Q.	16
J. Ment. Sc., Lond.	39
Am. J. Psychiat.	53

The *J. neur. psychiat.*, Lond. and the *J. Ment. Sc.*, Lond., the two representative British psychiatric periodicals, contain the greatest number of references among the foreign journals.

Table II groups the periodicals in relation to the number of references found.

TABLE II

No. of Periodicals	*No. of References*
10	0- 2
4	3- 4
3	5- 6
4	7- 8
4	9-10
1	13
1	16
1	39
1	53

Table III shows the distribution of quotations by years.

TABLE III

Year	*No. of References*
1929	2
1930	–
1931	2
1932	1
1933	3
1934	14
1935	20
1936	32
1937	38
1938	86
1939 (Jan.-June)	32

In Table IV is given the number of articles in relation to frequency of quotation.

TABLE IV

No. of Articles	*No. of Times Quoted*
47	0
35	1
23	2
10	3
7	4
3	5
3	6
2	7
1	8
1	9
1	11
1	13

Time-lapse between publication and first quotation

From the simple numerical data given above, one question emerged which seemed to warrant more statistical analysis—namely, the time-lapse between publication and first quotation.

Table V shows the data as correlated.

TABLE V

Number of Articles First Quoted	*Years Following Publication*
11	0 – ½
15	½–1
17	1 –1½
15	1½–2
9	2 –2½
2	2½–3
5	3 –3½
2	3½–4
3	4 –4½
4	4½–5
0	5 –5½
0	5½–6
1	6 –6½
1	6½–7
1	7 –7½
0	7½–8
1	8 –8½

It appears that *between one and two years after publication* is the most likely time for the first notice to be given to a paper. If this period elapses without quotation, the chances of notice are less, decreasing gradually to five years. One article, however, had to wait eight and one-half years for the first reference.

TABLE VI

Time Relation of Publications to All Quotations

Year	Tot. No. Publs.	Tot. No. Quots.	Av. No. Quot. Per Publ.	Av. Time-Lapse Between Publ. And Quots.		Range of Time-Lapse Distrib.				
				Years	*Mos.*	*Y.*	*M.*		*Y.*	*M.*
1929	5	15	3.0	5	10	–	4	to	9	6
1930	3	12	4.0	5	9	–	10	to	8	5
1931	3	7	2.3	3	6	1	6	to	5	1
1932	5	25	5.0	3	8	–	9	to	7	–
1933	11	29	2.6	3	6	–	5	to	5	7
1934	21	44	2.1	2	6	–	1	to	5	1
1935	15	20	1.3	2	–	–	1	to	3	9
1936	17	14	–.8	1	9	1	4	to	2	6
1937	25	52	2.1	1	–	–	1	to	1	9
1938	29	12	–.4	–	8	–	1	to	1	7
Totals	134	230	1.7	3	–		1	to	9	6

Table VI shows the total number of publications and total number of quotations by year, the average number of quotations per pub-

lication, the average time-lapse between publication and quotations and the range of time-lapse-distribution.

It will be noted that with the increase in publications, there is a decrease in the average time-lapse.

The range of time-lapse for all quotations is from one month to nine and one-half years.

Classification

It seemed to be worthwhile to classify the publications in the hope that this would lead to some conclusions as to the type of article most frequently quoted. The best basis for classification appeared to be the *form* rather than the content of the publication, with the exception of the papers which were grouped under the heading of "Reports" and were then sub-divided into classes determined by the nature of the data reported upon.

A careful analysis of the publications resulted in the following classification:

1. Reports (clinical, experimental, therapeutic, preliminary)
2. Theoretical discussions
3. Reviews
4. Case histories
5. Statistical analyses
6. Articles on technique
7. Chapters in books

Table VII lists the number of articles under each classification, the total number of quotations by classification, and percentage of articles quoted under each heading.

TABLE VII

Type of Publication	Total No. of Publications	Total No. of Quotations	No. of Publ. Quoted	% Quoted
Clinical Reports	51	126	38	74.5
Experimental Reports	26	30	14	53.8
Theoretical Discussions	18	28	12	66.6
Statistical Analyses	11	10	8	72.7
Therapeutic Reports	10	18	7	70.0
Case Histories	7	2	1	14.3
Preliminary Reports	5	7	3	*
Review Articles	2	3	1	*
Articles on Technique	2	2	1	*
Chapters in Books	2	4	2	*
Totals	134	230	87	

* Not enough articles for % figures.

The largest number of publications belong to the "clinical reports" and the largest number of quotations is found in this group also.

Discussion

It is a well-known fact, borne out by investigations, that any advances in the medical field appear in the periodical literature many years before they are incorporated in the current textbooks. K. K. Sherwood[5] found by checking one year of the *J. Am. M. Ass.* (July 1, 1930-June 30, 1931) that out of a total of 4,912 references 85% were to articles in medical journals, whereas all the other sources—books, pamphlets, reports, bulletins and proceedings—contributed only 15%.

Taking into consideration this fact it was thought that by checking relevant medical periodicals it could be ascertained to what extent the publications of the Research Service of the Worcester State Hospital came to the attention of other investigators. In addition to the field of neurology and psychiatry, the Research Service contributes to the literature of physiology, biochemistry and psychology. Therefore, representative journals of these subjects were included. Some periodicals in general medicine were examined also in an effort to determine whether the Research papers reached beyond the specialists to the general practitioner.

The physiological and biochemical periodicals had seventeen references—eight in the *Am. J. Physiol.*, seven in the *Annual Rev. Biochem.* and two other journals one each.

The psychological journals contained 31 references—nine in the *Am. J. Psychol.*, nine in the *Psychol. Bull.*, seven in the *J. Abnorm.* Psychol., and six distributed among three other publications.

The *J. Am. M. Ass.* had ten references. The other fourteen quotations in this group were found in four different journals, indicating that publications did not reach the general medical field to any large extent.

The time-lapse between publication and quotation seemed to be another aspect worthwhile to consider. The range of time-lapse between publication and first quotation varied from one month to eight and one-half years. Most of the first quotations, however, appeared *between the first and second years after publication.* Sherwood[5] found in his investigation that 55% of all magazine references were to articles that had come out in the *preceding five-year period.* Our present survey corroborates this finding.

For the examination of the time-lapse between publication and all quotations it seemed to be best to figure the time-lapse per year, i.e., counting all articles published in a certain year as a unit and figuring the range of quotations of this unit. The range of time-lapse for all quotations was from one month to nine and one-half years.

The classification of the publications was based *on the form*

rather than the content, the only exception being the "Reports." Reports were grouped in four subdivisions according to the content. For "Clinical Reports," the largest group, we had the highest percentage of quoted papers—74.5%. The publications quoted most often reported *results of original investigations of primary importance on timely subjects,* such as oxygen consumption rate, insulin treatment (a new approach at the time of the first report), and encephalography (a new technique) in relation to dementia praecox. The most popular article (13 references) was "Oxygen consumption in schizophrenia; distribution in 214 cases," by R. G. Hoskins, Director of Research, published in 1932 in the *Arch. Neur. Psychiat.,* Chic.; a basic contribution of the Worcester Research Service.

The technical problem of checking bibliographies for this survey was considerable. Miss Mary E. Kelly, who has been associated with the Research Service almost since its inception, and who was therefore familiar with the authors and the articles, undertook the checking of the bibliographies. She devoted many months to this work, which was done with extreme care. It is felt that this part of the survey was carried out with the most painstaking attention that could be had.

A less fortunate aspect of the problem is that the survey ends when the number of articles available for quotation was just becoming sufficiently great to allow some valid statistical analysis. For practical purposes, however, it seemed best to limit the survey to a ten-year period.

Another definite limitation of the data presented is due to the fact that the first appearance of a quotation following publication varies so greatly that conclusions as to the papers published in the latter part of the survey are not fully warranted.

It is obvious that this kind of survey could be done most satisfactorily by checking references to a few representative papers over a definite number of years (5-10) following publication. We intend to carry out a further survey at a later date.

Conclusions

None but the most obvious conclusions can be drawn from this survey, namely, that papers are quoted most often in the periodicals related to their specialized fields and at a relatively early date after the report appears, and that articles dealing with new and current problems are the most likely to be given notice a short time after publication.

Summary

One hundred thirty-four articles published by the Research Service of the Worcester State Hospital during a period of ten years (1929-

1938) were selected for a survey of references in 29 leading medical periodicals dealing with (1) psychiatry and neurology, (2) physiology and biochemistry, (3) psychology and psychoanalysis, and (4) general medicine. Four hundred forty-six volumes checked contained 230 references to the Worcester publications. Five journals in the field of neurology and psychiatry had 131 references—56.9% of the total. The remaining 99 quotations were scattered in twenty periodicals. Forty-seven articles, 35.1% of the total, were not quoted at all. The range of the number of quotations for the 87 quoted articles extended from one to thirteen. The time-lapse between publication and first quotation varied from one month to eight and one-half years. The range of time-lapse for all quotations was from one month to nine and one-half years. The most likely period for first quotation appeared during the first two years following publication. Clinical reports on topics of timely interest proved to be the most quoted.

REFERENCES

1. HOSKINS, R. G. et al., A co-operative research in schizophrenia, Arch. Neur. Psychiat., Chic., 30:388-401, 1933.
2. GROSS, P. L. K. and GROSS, E. M. College libraries and chem. education, Science, 66:385-389, 1927.
3. ALLEN, E. S. Periodicals for mathematicians, Science, 70:592-594, 1929.
   MCNEELEY, J. K. and CROSNO, C. D. Periodicals for electr. engineers, Science, 72:81-84, 1930.
   LEVY, D. M. and COBURN, M. Books suggested f. a library pertaining to behaviour problems of children, Ment. Hyg., Alb., 14:445-462, 1930.
   GROSS, P. L. K. and WOODFORD, A. O. Serial literature used by Am. geologists, Science: 73:660-664, 1931.
   JENKINS, R. L. Periodicals for medical libraries, J. Am. M. Ass., 97:608-610, '31.
   SHERWOOD, K. K. Relative value of medical magazines, Northwest Med., 31:273-276, 1932.
   LOUTTIT, C. M. and LOCKRIDGE, L. L. Psychological journals, Am. J. Psychol. 46:147-148, 1934.
   MENGERT, W. F. Periodicals on endocrinology of sex, Endocrinology, 18:421-422, 1934.
   GREGORY, J. An evaluation of periodical literature from the standpoint of endocrinology, Endocrinology, 19:213-215, 1935.
   HACKH, I. Periodicals useful in the dental library, Bull. M. Libr. Ass., 25:109-112, 1936.
   HUNT, J. W. Periodicals for the small bio-chemical and clinical library, Libr. Q., 7:121-140, 1937.
   GREGORY, J. An evaluation of medical periodicals, Bull. M. Libr. Ass., 25:172-188, 1937.
   HUNT, J. W. Non-medical journals for the clinical library, Libr. Q., 8:503-509, 1938.
4. MCNEELEY, J. K. M. and CROSNO, C. D. vide supra.
5. SHERWOOD, K. K. vide supra.

APPENDIX

Publications quoted 5 times or more (12)

Quoted 5 times (3)

Endocrine therapy in the psychoses,
R. G. Hoskins and F. H. Sleeper,
Am. J. M. Sc., 184:158-166, 1932.

Organic functions in schizophrenia,
R. G. Hoskins and F. H. Sleeper,
Arch. Neur. Psychiat. Chic., 30:123-140, 1933.

Oxygen metabolism in schizophrenia,
R. G. Hoskins,
Arch. Neur. Psychiat., Chic., 38:1261-1269, 1937.

Quoted 6 times (3)

An analysis of the schizophrenia problem from the standpoint of the investigator.
R. G. Hoskins,
J. Am. M. Ass., 97:682-684, 1931.

An outline of a co-operative project for validating the Rorschach Test,
S. Rosenzweig,
Am. J. Orthopsychiat., 5:121-123, 1935.

Effect of prolonged insulin therapy on glucose tolerance in schizophrenic patients,
J. M. Looney and D. E. Cameron,
Proc. Soc. Exp. Biol., N.Y., 37:253-257, 1937.

Quoted 7 times (2)

Basal metabolism in schizophrenia,
R. G. Hoskins and F. H. Sleeper,
Arch. Neur. Psychiat., Chic., 21:887-900, 1929.

The thyroid factor in dementia praecox,
R. G. Hoskins and F. H. Sleeper,
Am. J. Psychiat., 10:411-429, 1930.

Quoted 8 times (1)

The electro-encephalogram of schizophrenics during insulin treatments,
H. Hoagland, D. E. Cameron and M. A. Rubin,
Am. J. Psychiat., 94:183-208, 1937.

Quoted 9 times (1)

A study of hypnotically induced complexes by means of the Luria technique,
P. E. Huston, D. Shakow and M. H. Erickson,
J. Genet. Psychol., 11:65-97, 1934.

Quoted 11 times (1)

The electro-encephalogram of schizophrenics during insulin hypoglycemia and recovery,
H. Hoagland, M. A. Rubin and D. E. Cameron,
Am. J. Physiol., 120:559-570, 1937.

Quoted 13 times (1)

Oxygen consumption (basal metabolic rate) in schizophrenia; distributions in 214 cases,
R. G. Hoskins,
Arch. Neur. Psychiat., Chic., 28:1346-1364, 1932.

The Relation of Mental Disorder to Events in History*

By HUBERT J. NORMAN, M.B.

THE STUDY of history from the psychiatric point of view is, as I have already tried to show,[1] comparatively modern, but the more the subject has been regarded from this angle the more has it been recognized how valuable the results are. It is this more restricted method of research with which I am concerned, without at the same time losing sight of the fascinating results achieved by those who have studied historical characters from the clinical, rather than from the psychiatric, aspect. To some of these I have already referred: but I should like to note also those clever and entertaining volumes, "Idols and Invalids" and "Hero-Dust,"[2] by Mr. J. M. Kemble.

It is not intended to draw any hard-and-fast line between the approach to the subject from the psychological as opposed to the physical point of view. Such a distinction is artificial and, therefore, likely to be misleading. It may be better to premise that the term psychatric is an inclusive one; and according to definition includes the "psycho-pathological and general medical aspects."[3] The differences are of degree and not of kind. Strictly speaking every physical disorder has its psychological concomitant; while psycho-pathological change without physical (or physiological) disorder is—to me at least—incomprehensible.

Human nature seems to have changed little, if at all, with the passage of the centuries: and if this is true of the sane it is also equally true of the insane. We sometimes think that there has been a steady progression and that, with the changes we have undoubtedly wrought in our environment, we, too, have become different from—and *of course* superior to—our ancestors. Of prehistoric times it is difficult to speak with any degree of certainty; but with later, yet far distant periods, we can more justifiably institute comparisons. It cannot be said that these are all to our advantage—or at any rate to the degree that

* Read before the Psychiatric Section of the Royal Society of Medicine, London.

is usually so complacently asserted. There is not sufficient evidence to show that character has improved: and there is no good and sufficient evidence that the capacity for abstract thought is greater than it was two or three thousands years ago. Human society is built upon inhibitions, or self-restraint, upon what we refrain from doing, as well as upon what we do. Can we, then, remembering that orgy of destruction, the Great War, and noting what is now happening, honestly say that mankind has improved? It seems that people are just as prone to follow after false gods, to put their trust in the neuropath, the psychopath, the mattoid,[4] and the moron.[5] One might be astounded at the influence such half-wits can have were one not accustomed to find that, throughout history, it has ever been the same.

A further difficulty in considering historical characters is to decide as to the character and the degree of mental disorder that was present. This is especially the case in those examples who were of the borderline type, and the difficulty is precisely as it is in everyday practice still. It is no more easy or wise to be dogmatic in these instances than it is in certain cases where the question of certification arises, of ability to make a will, or of being responsible in law for criminal acts. The matter is still further complicated by the disinclination of relatives, friends or historians to mention symptoms or relevant facts which might confirm the diagnosis of mental disorder. They may be considered as not noteworthy, they may be overlooked, or they may be suppressed. One cannot help feeling that some historians and biographers merit criticism in this respect. If an individual is of sufficient importance to have the story of his life told, still more important is it to make that story a true one. Sometimes the writers are disingenuous, but more often—and this applies to some medical writers as well—they have not that modicum of knowledge of psychiatry which would enable them adequately to appraise the value of the mental symptoms. Naturally where the insanity is obvious—when the person raves, is noisy, restless, incoherent in speech, is violent, or when conduct is in other ways markedly disordered—there is seldom any dispute. Even lesser degrees of mental disorder may be admitted where the individual is unpopular. Our inclination is to agree that the symptoms seen in a Marat or a Nero are associated with insanity while we tend to minimize those of a Joan of Arc, or of a Chatham. Actually, and if we are to take a scientific view of the matter, we should not allow ourselves to be influenced by the goodness or badness of acts done: otherwise we may be swayed in our judgment by political, racial, or religious bias.

It may not be strictly true to say with Voltaire[6] that the "history of the great events of this world is little more than the history of

crimes," but his cynicism, as usual, has a background of truth. This view is supported by Gibbon who expresses it thus: "History, which is, indeed, little more than the register of the crimes, follies, and misfortunes of mankind." How true this is of some aspects of history regarded from the psychopathic point of view I shall try to demonstrate.

The application of such a method of investigation is, however, even now apt to be resented by those who prefer to retain their illusions and to continue their hero-worship despite the fairly obvious evidence that "something is rotten in the state of Denmark."

It is curious to note that this prejudice against describing symptoms as being "mental" still persists even in this age of enlightenment. This might be considered as merely popular prejudice and associated with the high degree of ignorance which the vast sums spent on education have not commensurately diminished, but experience soon negates this view of the matter, for the study of biography and of history exemplifies the disinclination there is to admit or the inability to recognize the influence of morbid mental factors. Even when these have been admitted there is apt to be later a process of whitewashing in order to hide the spots and blemishes; aberrations, insensate folly, frenzy, incoherence, are merely "pretty Fanny's way"[7] and not to be taken seriously. For such as these Lytton Strachey lived in vain!

In regard to the material available, and on those individuals with evident insanity, the difficulty is in limiting the number of cases selected. Almost everywhere and at every period of history are they to be found: among kings and commoners, dynasties struggling ineffectually against the blight of mental disorder, communities suffering gladly, or more often sadly, the domination of mad rulers. It is a sombre picture. One is inclined to feel that blind chance alone could be responsible for such a state of affairs, for it is difficult to believe a people would willingly submit to be ruled by an Ivan the Terrible, a Caligula, a Nero, or by so many others who might be named along with them.

It is a question of submission not only to an individual madman but at times to a succession of them. There are such striking instances of this that the effect of bad hereditary factors—of consanguinity of marriages, and of inbreeding where the stocks from which they spring are unsound—in the perpetuation of insanity in various forms is hardly in dispute. It has been described at considerable length by such writers as Dr. W. H. Ireland and Dr. Cabanès in regard to the Claudio-Julian family in Rome, the Romanoffs in Russia, and the Spanish Royal Family.

In this connection Dr. Ireland remarks, "Mental disease is very common in royal and noble families, and great disasters to nations

have sometimes signalized the madness of rulers."[8] It will be of interest briefly to recapitulate the family histories of two of these lines. Let us consider first the Claudio-Julian family. Julius Caesar was one of the greatest men of all time and with abilities of the most comprehensive kind, yet within a comparatively few years the dynasty which he founded came to an end with the lunatic Nero, having produced in its course the imbecile Claudius and the epileptic Caligula. Such a state of affairs naturally leads to the suspicion that something was very definitely wrong with the parent stock, and it would appear that even in the great Caesar himself there was something to account for this. That he was of the epileptic temperament seems to be clear from the statements of Suetonius (75-160 A.D.) and of Plutarch (about 46 A.D. to about 120 A.D.). In addition it is said that he exhibited homosexual tendencies, and, indeed, general sexual incontinence.

Ireland makes the suggestion that if Caesar had not been assassinated he "might have sunk into insanity, perhaps after a period of extravagance and furious tyranny."[9] This is, of course, mere supposition. The fact remains, however, that there were already signs of instability in the family, and these signs may help to explain subsequent events.

As there was no son to succeed him (his son Caesarion by Cleopatra was put to death after the fall of Marc Antony), the succession passed to Augustus, grandson of Caesar's sister Julia. He was a ruler of great ability, but he has been described as "coldly satiating his own desires, bringing fear and force to subdue the chastity of free-born virgins, and setting at nought the honour of the wives of Roman citizens."[10] It is said that he, too, suffered from epilepsy. Suetonius describes him as cruel, treacherous, and in his earlier years given to homosexual practices. What heightens the suspicion that there was some essential weakness is that Julia, his daughter, was a wanton whose excesses were a public scandal. He even contemplated putting her to death but instead sent her into banishment. Two of her sons died at an early age, one of them mentally affected;[11] the third was an intractable imbecile of whom Tacitus records that "he was of clownish brutality and great bodily strength . . . he was gloomy and savage." Augustus gave orders that, on his own decease, this wretched creature was to be put to death so that he might not suceed to the throne. This was accordingly done.

With regard to his successor, Tiberius (14-37 A.D.) there is still a conflict of opinion. Undoubtedly he was a great soldier and an able ruler: but there seems to be little doubt that he was also at times a tyrant of the worst description and given to excesses of lust and cruelty. This was in the later years of his reign when the effects of his insanity had become more pronounced and there was a weakening of self-control. There can be little doubt that the type of mental disorder from

which he suffered was manic-depressive insanity. Tiberius was a step-son of Augustus and was of the Claudian family, but even though he did not share in the degeneracy of the Julian line, he had inherited a neuropathic constitution from his own stock. The inconsistencies which historians have noted in his conduct at different times are quite in accord with this diagnosis as was also the terminal deterioration.

Whatever doubts there may possibly be with regard to the insanity of Tiberius, there are none respecting the three emperors who followed him—Caligula, Claudius, and Nero. Caligula suffered from epilepsy which was apparently producing rapid deterioration when he was assassinated. He reigned for less than four years, but during that time he showed the most evident signs of insanity. For a while he behaved reasonably and even well, much better than might have been expected considering his character and education, but very soon his innate lack of control became obvious and he began what Suetonius describes as his "frantic and savage career."

Caligula (37-41 A.D.) was twenty-five when he became Emperor; Claudius who succeeded him was fifty. After the experience the Roman people had had of Caligula it might have been expected that they would exercise some care in the choice of a successor. In spite of all this Claudius (41-54 A.D.) was chosen, or was, rather, thrust into the position by the soldiery. He was a high-grade imbecile, one whom even his mother, Antonia, described as "an incomplete production of Nature." In contrast to Caligula he was generally of a kindly disposition, but his intellectual weakness and moral defect showed themselves in his callous indifference to suffering, in gluttony, and in subjection to the influence of his freedmen who are said to have governed for him. As if Nature had not done badly enough for him, he was married to the notorious Messalina, a nymphomaniac and one whose name has ever been a by-word and reproach. Her condition must have been near to insanity for, among other actions, she even went through the ceremony of marriage with another man while she was still the wife of Claudius. A mad world, indeed![12]

Nero (54-68 A.D.), who succeeded Claudius and was the son of Agrippina, Caligula's sister, may well be said to have eclipsed his predecessors in insane wickedness. His history shows clearly that his mental trouble was manic-depressive insanity with well-marked periods of excitement and of depression. As is well-known the commencement of his reign—and before his insanity had fully developed—was characterized by conduct which earned the approbation of his people and of historians. Yet that all-too-brief period is nearly lost sight of in the almost incredible sequel.

With Nero the race of Caesars ended. It has provided for all time

a lesson in heredity and in the danger of placing autocratic power in the hands of members of a degenerating family, or indeed in those of any individual whose family-history gives such definite indications of insane inheritance, or who has, in any case, shown definite symptoms of insanity.

In Spain in the fifteenth, sixteenth and seventeenth centuries a similar example of degeneration is to be noted, but the process probably started earlier than that. In the fourteenth century there were three rulers, all of the name of Pedro—of Portugal, of Castile, and of Aragon—who were all designated "the Cruel." Rulers who achieved such distinction as that in those days may well be suspected as far as their mental make-up is concerned. It is probable that one at least of them, Pedro of Castile (1350-68), was a paranoiac.[13] However that may be, it was from these worthies that the Spanish royal family arose. In 1469 Isabella of Castile married her cousin, Ferdinand of Aragon and effected a union of the "cruel" ancestors: her father, John II of Castile, was of unsound mind and her mother, Isabella of Portugal, was insane for many years, having "fallen a victim," in the words of Martin Hume, "to the hereditary curse of the house of Portugal."[14] The same writer describes Isabella as a "saintly neurotic, who happened also to be a genius and a queen." In religious matters she was a fanatic, and when it is remembered that her confessor and spiritual tutor was the even more fanatical Torquemada, it is not difficult to realize that there were unpleasant times ahead for those who did not see eye to eye with them. The Inquisition was set up in Spain and the persecution of the Jews and of the Moors was begun. The results of this policy were far-reaching, and it is doubtful if the country ever fully recovered from the effects of it. "An ingenious and diligent population, eminently skilled in the arts and manufactures, had been driven into exile by stupid and remorseless bigots."[15]

Her husband, Ferdinand, is described as "cruel and perfidious. . . . His perfidy was notorious even at an age when its practice had become an art."[16] At the least, both of them were cruel and perfidious. Whatever may be the final opinion regarding them, there can be little doubt of the next generation, for their daughter was Juana who was actually known as "The Mad" ("la Loca"). In her the symptoms of mental disorder appeared quite early in life. Even had she been more robust the education and upbringing to which she was subjected by her cruel, fanatical and eccentric mother might have sufficed to upset her mental balance. The form of mental disorder from which she suffered was manic-depressive insanity, but before it became quite obvious that she was definitely insane she had been married. From this marriage came one of the most remarkable men of all time, the future Emperor

Charles V, yet even with him all was not well. He had attacks of melancholy and of epilepsy, which are said to have ceased after his marriage, but he continued to suffer from headaches and gout. He was a gluttonous eater and could not restrain himself in this direction though he knew that he was ruining his health.[17] Motley gives a vivid description of his gluttony, and as MacLaurin pleasantly puts it, "He deliberately ate himself to death. An ignoble end."[18] Whatever the reason may be, he aged prematurely, and at fifty-five, when he might still have been in vigorous manhood, he abdicated, describing himself as "Old and feeble . . . in all my members."

His son Philip II, who succeeded him, was of quite different calibre and possessed little or nothing of his father's forceful personality. He was a man of poor physique and of narrow outlook, sombre, fanatical and superstitious. He was the offspring of the marriage of Charles and *his cousin* Isabella; there might have been a difference had common-sense prevailed and new blood been introduced into this decadent stock, for two of Charles' illegitimate children were exceptionally able. One, the daughter of a Flemish lady, was Margaret of Parma, who became a Regent of the Netherlands; the other, by Barbara Blomberg, daughter of a washerwoman, was the famous Don John of Austria, whom Chesterton[19] describes as "the last knight of Europe . . . The last and lingering troubadour," the victor of Lepanto.

Philip II (1527-1598) married Mary Tudor (1554), who maintains a place in our memories because of the sanguinary epithet by which she is known and also because of her cardiac association with Calais! One trembles to think what might have sprung from the union of this morbid, sombre, fanatical pair. But Mary, though hopeful, was barren. She, too, was already related to him, for she was a granddaughter of Isabella the Catholic, and his father's cousin.

Prior to this Philip had married (1543) *his cousin* Mary of Portugal, who bore him a son, the unfortunate Don Carlos. Don Carlos appears to have suffered from schizophrenia; he was cruel, mischievous, impulsive, suicidal, and homicidal. His conduct became so obviously insane that towards the end of his life he had to be placed under care. He died at the age of twenty-three. The facts of his life hardly seem to fit him for the romantic figure drawn by Schiller and by Alfieri! Martin Hume gives quite another picture of him, "a lame, epileptic semi-imbecile," later "a raving homicidal maniac."[20]

Philip, persevering in his matrimonial efforts, married two more wives, and his successor, Philip III, was his son by his marriage with his *niece* Anne of Austria. There were also three other sons and a daughter who all died young. Philip II was not without ability in his

narrow way, but there was little energy or capacity left for the remainder of the line.

Philip III (1598-1621) was a man of feeble character, "sickly and scrofulous" (Martin Hume); he was indolent and weak, leaving the decision of affairs to his favorites and the choice of his wife to his father, who made sure of the final decadence of the line by choosing a cousin, Margaret of Austria, another descendant of Joan the Mad. She brought "an anaemic body and a stunted mind to rear his children." Is it to be wondered at that these children, of whom they had several, were "all bloodless decadents of low vitality, with big mumbling jaws and lack-lustre eyes"?[21]

He was succeeded by his son, Philip IV (1621-1665), another weakling who also left the government of the country to his favorites. "His reign, after a few years of barren successes, was a long story of political decay and disaster."[22] Nature, doing its best to eliminate this decadent family, decreed that most of his offspring die within a short time of their birth. (His weak, mask-like face with its prominent jaw has been made familiar because of the numerous portraits painted of him by Velasquez.) He is described by Ireland as "indolent and voluptuous." In the latter direction he did achieve competence; he had a number of children by his two wives, and, according to Cabanès, "not less than 32 illegitimate offspring."[23]

His successor, by his second wife (and niece) Mariana of Austria, was Charles II (1665-1700), who brought the main line of the family to an end. He was a younger son; his elder brother, Prosper (infelicitous name!) was an epileptic and died at an early age. Charles was an epileptic also—childish and imbecile—yet he occupied the throne for 35 years. What a commentary on the "divine right of kings." Mignet summarizes the matter in these biting words: "Charles-Quint avait été général et roi: Philippe II n'avait été que roi, Philippe III et Philippe IV avaient à peine été rois; Charles II ne fut pas même homme." Martin Hume is even more explicit: "The last descendant in the male line of the great Emperor Charles V died of senile old age before he was forty, the victim of four generations of incest; leaving as his legacy to the world a great war which changed the face of Europe, and decided the future course of civilization."[24]

That is the end of this part of the story, but as if the unfortunate country had not suffered enough from half-witted rulers, it next had planted on it by the perfidy of Louis XIV his grandson, Philip, of whom Macaulay writes, "Philip was not so sickly as his predecessor but he was quite as weak, as indolent, and as superstitious; he very soon became quite as hypochondriacal and eccentric."

As we shall see, the man of humble origin born "out of the purple" is by no means exempt from similar frailties, and therefore, even though he and his satellites feel that the marvelous man is building for eternity—or for at least a thousand years—because the spot-light of fame, or of notoriety, beats upon him for a little while, even for him "the moving finger writes, and having writ, moves on" to write the story of those who have ousted or supplanted him.

In Rome some six hundred years ago there chanced certain events which it is apposite to recall nowadays. About the year 1313 there was born a boy who was known later as Cola di Rienzi; his father is said to have been a tavern-keeper and his mother a washerwoman. He was a studious boy who became a notary and was later given a position at the Papal Court, which was then at Avignon, in 1343.

At that time Rome was in a deplorable condition. The control of affairs was in the hands of the barons and the nobles who, with the aid of mercenary troops, exercised a complete tyranny. Yet within a matter of a few years this remarkable young man rallied the populace around him, started a revolution and before long was strong enough to defeat the barons. He took the title of tribune, and he "governed the city with a stern justice, in marked contrast to the recent reign of license." His power soon waned. "His extravagant pretensions excited ridicule"; his government was costly, necessitating heavy taxation; his mode of life was ostentatious, and he "passed his time in feasts and pageants." He was even then eccentric and unstable, and his assumption of office was accompanied by fantastic ceremonial. "He was installed tribune with great pomp, wreaths of flowers being on his head. Gregorovius says this ceremony was the fantastic caricature in which ended the imperium of Charles the Great."[25] It is interesting to note in view of recent events that "He marched in a solemn procession to the Capitol, from the balcony of which he harangued the people and received in their acclamations a ratification of his assumption of supreme power."[26] There is a familiar ring about this balcony scene!

Prior to this the nobles had tended to regard him rather as a buffoon and as "one of those persons of unsound mind who were then in great request for the amusement of society," and again as "not being feared by the nobles, who thought him mad."[27]

Whatever the reason may have been his tenure of office did not last long. Gibbon says that "in him the hero and the coward were strangely mingled." So, only seven months later, "terrified by a slight disturbance he abdicated and fled from Rome." After many vicissitudes including a period as a prisoner of the Pope at Avignon, and also having been sentenced to death, he returned to Rome in August 1354. Evidently

by this time a very definite change had taken place in his character, and, although he was received with enthusiasm and rejoicing by the people, his popularity soon waned. Gibbon explains it thus: "In the society of the Germans and Bohemians he is said to have contracted the habits of intemperance and cruelty. . . . Even his justice was tainted with the guilt of reproach of selfish cruelty; the most virtuous citizen of Rome was sacrificed to his jealousy; and in the execution of a public robber, from whose purse he had been assisted, the magistrate too much forgot, or too much remembered, the obligations of the debtor."[28] The final scene was not long deferred. There was a popular uprising against him. Once more he appeared on the balcony of the Capitol endeavouring to appease the crowd by his eloquence. Finding that this was unavailing he tried to escape in disguise, was captured, and dragged to the platform in front of the palace. There, in the words of Gibbon, "A whole hour, without voice or motion, he stood amid the multitude, half naked and half dead." Then he was stabbed to death.

What was the reason of this rapid revulsion of feeling against a man who had done so much for the people who now turned against him? The historians give us little indication of what it was, though one does say that, after Rienzi had fought and beaten the barons, his "head was turned by this sudden success, and in his great need of money he began to play the tyrant by levying taxes and exacting instant obedience," and that, when he returned in 1354, "his money ran short, and he resorted to violence to fill his purse."[29] Bulwer-Lytton, who gives a vivid picture of Rienzi and of his times, and who had apparently studied the period carefully, is not an entirely reliable witness on the responsibility of mental disorder and deterioration in the sequence of events in the career of his hero, though he does make Rienzi say on one occasion, speaking of himself, "the mind diseased blunts all sense of bodily decay." But even Lytton could not blind himself to the facts; the difference is in the interpretation of these. He notes Rienzi's arrogance, superstition, excessive drinking, the "hysteric of overwrought and irritable emotion," his morbid suspicions, "his dark fits of fanatical and mystical revery," and so on.

Lombroso, while admitting the genius of Rienzi, classifies him among the "religious lunatics and mattoids." After describing him as a man who "in his political ideas surpassed not only his contemporaries, but many modern thinkers, and preceded Mazzini and Cavour in the idea of unity," he says that he "was in fact a monomaniac . . . if he was great in conception, he was uncertain and incapable in practical matters." He notes his early abstinence and points out that "he passed to the opposite extreme of continued orgies and actual dipsomania, which he excused by alleging the effects of a poison which he believed to have been

administered to him in prison." As might be expected deterioration soon took place. "His body became enormous . . . while his face acquired an entirely brutal cast of expression. His mind was much less active, and his temper fundamentally changed, while his fickleness, restlessness, and oddity, which had served to excite admiration for him in the mind of the populace, now had so degenerated as to redound to his injury. Those who saw most of him said that he changed his mind, as well as the expression of his face, from one minute to the next, and was never constant to the same thought for a quarter of an hour together."

In Rienzi's life and in his letters Lombroso finds irrefragable evidence of his mental disorder and of his degeneration. Of the letters Lombroso says that "they would by themselves be sufficient material on which to base a diagnosis," and again, "there is not one of them which does not bear the impress, either of a morbid vanity, or of those trivial repetitions and plays upon words especially characteristic of the insane."[30]

It is, therefore, in Rienzi's mental trouble and not in the fickleness of the populace that lay the reason of his speedy fall from power.

Our own country also provides us with examples. One of the outstanding events of the 15th century was the conflict between the Houses of Lancaster and of York. The mere mention of that, with the associated Wars of the Roses, is sufficient to recall that those were indeed troublous times. Strong and capable rulers were needed to direct affairs. But what did happen? The first king of the House of Lancaster, Henry IV (1367-1413), who succeeded to the throne in 1399, was an epileptic in whom definite mental deterioration took place. His son, Henry V (1387-1422), Shakespeare's Prince Hal and Falstaff's boon companion, became king on the death of his father in 1413 and reigned for only a brief but brilliant period which included the notable victory of Agincourt. There is a difference of opinion as to the wildness of his youth, and there is no definite evidence of mental trouble. It is, however, significant that his only son, who succeeded him as Henry VI (1421-1471), was mentally unstable. The description of his condition is suggestive of manic-depressive insanity, but he did suffer from epilepsy and gradually became more reduced mentally, so that some writers have spoken of his condition as one of imbecility. It was an unkind fate which decreed that he should have to reign in so troubled a time. His inclinations were towards study and religion; it was he who founded Eton (1440) and King's College, Cambridge (1441) and who because of his gentleness and piety was known as "The Saint." Hardly was he the person to face the warlike struggles in France and the Wars of the Roses at home! It is interesting to recall that Joan of Arc had her brief spell of glory and of fame during the

early part of Henry's reign: her victory before Orleans was in 1429. As to *her* mental condition the controversy appears to be endless. The unfortunate king reigned till 1461 when he was deposed by Edward of York. For some years he was a prisoner in the Tower; then for six months 1470-71 he was reinstated by the Earl of Warwick, the "King-Maker." After Edward's final victory at Tewksbury, in 1471, Henry was killed, and it is surmised that Richard of Gloucester may have been responsible for this. Henry's only son Edward was also killed after Tewksbury. So ended the line of Lancastrian Kings.

Let us now turn to the Hanoverians. Thackeray did not like the Georges and said so pretty plainly; unduly prejudiced against them he may have been, but, taken by and large, they were not a very admirable or likeable lot. Even an apologist for them would have difficulty in drawing a favourable picture of George I (1660-1727), a King of England who could not speak the language, or of George II (1683-1760), narrow minded and more fit for a subordinate post in the civil service than to rule, and described as being "as loose a liver as his father."

That there was a psychopathic strain in these Hanoverians—or that they managed to acquire it successfully through their marriages—is certain, for two of the grand-children of George II definitely suffered from insanity. One was Christian VII of Denmark (1749-1808), whose mother was a daughter of George II and whose father is said to have been a drunkard. His disorder appears to have been schizophrenia, and for the last 26 years of his reign he was so mentally enfeebled that he was incapable of ruling. He married his cousin, Caroline Matilda, a sister of our George III. Caroline, not surprisingly, consoled herself with Count Struensee; so the marriage was dissolved. Fortunately there were no children.

George III (1738-1820) was the son of Frederick, Prince of Wales, son of George II and of Augusta, a princess Saxe-Gotha. Frederick had no particular ability and spent a good part of his time in quarreling with his father and in interfering in affairs of state. Professor Basil Williams sums him up in a word, "When George was 13 his absurd father died," while of Augusta he says, "she was a foolish, ignorant woman."[31]

In the case of George III there is no doubt as to the diagnosis: it was manic-depressive insanity, of which he had five definite attacks. The first one was in 1765 when he was 27, the second in 1788 at 50, the third in 1801 at 63, the fourth in 1804 at 66, and the fifth in 1810 at 72, from which he did not recover. These separate attacks were not lengthy in so far as the acute symptoms were concerned, lasting on the average about six months. (It is interesting to note the approximation

of the attacks as the years passed, and the eventual dementia.) One writer suggests that the preliminary attack was even earlier, in 1762, at the age of 24. "It is significant of the character or violence of the malady," he says, "that his majesty was blooded seven times and had three blisters applied."[32]

Had he been more fortunate in his ministers the story of his reign might have been different, and it was the irony of fate that the one man who could have brought about this difference should have suffered from a similar mental disorder. This was William Pitt, Earl of Chatham. "The study of psychiatry . . . has developed sufficiently during the last fifty years," says Brian Tunstall,[33] "for us to state with confidence that Chatham was the victim of a frequent type of mental disease known as manic-depressive insanity." Chatham's case was "far milder than the King's." There was another essential difference, for in George III "there was never the slightest manifestation of genius." At best he was a man of mediocre ability, obstinate and prejudiced. Frederic Harrison describes him as "destined to be for many years the evil genius of our country."[34] Not that he was without his good and amiable qualities which endeared him to his people: his domestic life was exemplary and he was always courageous so that, as Wraxall said, "his virtues had obtained for him a higher place in our esteem than any prince had occupied since the conquest." As a private citizen he would have been admirable; the trouble lay in the fact that he was a king.

It was the more unfortunate that Chatham's third attack came at such a critical time as it did, a few months after he had formed his second Ministry in 1766, and lasted for nearly two years. In his earlier period of office he had altered the position of England as a European, rather as a world, power in an almost incredible manner. "No doubt," says Professor Basil Williams, "had Chatham . . . retained his faculties and been able to guide the ministry, he, not the king, would have settled its policy, for he was not apt to take his orders from anyone." Chatham resigned in 1770. "For the succeeding twelve years, therefore, the policy of the country was essentially that of the king," and he was "the director of the national policy during the war with America (1776-83)."[35] So between these two psychotics the stage was set for inevitable calamity. It is described in no uncertain words by Frederic Harrison: "The Chatham Ministry is the strange and pathetic story of a Prime Minister continuing in office during two years, though disabled by the state of his mind, not only from directing the policy of his government, but even from seeing his colleagues and knowing what they were doing, whilst an obstinate King and his bewildered servants prepared ruin for the country under the shield of a great name."[36]

Chatham died in 1778, in his seventieth year, but George III occu-

pied the throne for more than forty years after that. It cannot be said that he reigned for that length of time, for the attacks of insanity already mentioned recurred and for the last ten years of his life he was quite insane. In addition he became blind; he was indeed a truly pathetic figure.

Chatham despite his manifold disabilities—for, in addition to the mental handicap, he suffered from his youth up from severe gout—is to be reckoned as one of the chief builders of the British Empire. It is interesting to note that one of those who aided him in this matter, Robert Clive, was also mentally disordered at times and, but for a mere chance, would not have survived beyond his youth. His trouble appears also to have been manic-depressive in character. "He was," says Gleig, "wayward and irritable" when he was young; "he began to labour under occasional fits of low spirits, during the paroxysms of one of which it is said that he twice made an attempt to destroy himself."[37] In Clive's own words, "I twice snapped that pistol at my own head." A friend happened to come into the room and Clive handed the pistol to him: it did go off when the friend fired it out of the window.

Macaulay says of him, "From early youth he had been subject to fits of that strange melancholy 'which rejoiceth exceedingly and is glad when it find the grave,' " and, speaking of his later days, says, "Clouds had long been gathering over his mind, and now settled on it in thick darkness. . . . During his long residence in tropical climates, he had contracted several painful distempers. In order to obtain ease he called in the help of opium; and he was gradually enslaved by this treacherous ally."[38] Another writer dramatically describes the final phase, "Sickness, opium, mental depression—on 22nd Nov. 1774 Clive died by his own hand." Thus tragically ended his amazing career at the comparatively early age of 49.

It is, perhaps, easier to associate the idea of mental instability with the more imaginative types of mankind—poets, painters, musical composers, religious fanatics—than with philosophers, political thinkers, or scientists, but every class of individual has provided examples.

Jean Jacques Rousseau (1712-1778) was a man of such outstanding ability, and one who exercised so much influence by his writings, that it is difficult to associate a chronic and progressive condition of insanity with him. Yet so it was: he was a classical example of paranoia. During the earlier part of his life he was shiftless and of no apparent ability. He found it difficult to settle anywhere, tried one occupation after another, and in his lack of success there probably rose the first feelings of his being misunderstood and unjustly treated. In the course of time this showed itself in definite ideas of persecution, which alienated him from all of his friends in turn, even the kindly David Hume,

whom he attacked so violently and who aptly described Rousseau as a man born "without a skin."

So shrewd a thinker as Voltaire could, of course, see the unwisdom of much of what Rousseau enunciated and could ridicule such a fantastic and half-baked idea as that of Rousseau's "noble savage," with the theory that civilization is actually deterioration from the perfection of primeval simplicity. When acknowledging receipt of Rousseau's "Discourse on the Origin of Inequality" Voltaire wrote, "No one has ever been so witty as you are in trying to turn us into brutes; to read your book makes one long to go on all fours. As, however, it is now some sixty years since I gave up the practice, I feel that it is unfortunately impossible for me to resume it." In these few witty and satirical sentences what a caustic criticism we are given of Rousseau's unpractical, romantic ideas! "Voltaire was convinced that all this denunciation of civilization was boyish nonsense; that man was incomparably better off under civilization than under savagery; he informs Rousseau that man is by nature a beast of prey, and that civilized society means a chaining of the beast, a mitigation of his brutality, and the possibility of the development, through social order, of the intellect and its joys."[39]

In addition there are, of course, the practical and valuable contributions which Rousseau made in his writings to the betterment of social conditions, to the improvement of methods of education, etc., and no reference to him, however brief, can leave out mention of that classic of autobiography, the "Confessions."

The latter part of his life was characterized by the progressive development of his delusionary ideas and suspicions. The end came with such suddenness that it has given ground for the belief that he committed suicide. It is significant that he had previously had suicidal impulses.[40] On the other hand his death may have been due to apoplexy. The possibility of suicide has not, however, been definitely excluded.

The revolutionary ideas of Rousseau had their influence on events in France only a short while after his death. This has been disputed, but it is at least plausible. As one writer puts it, "The men of the Revolution regarded him with something like idolatry,"[41] and from him they adopted not only the ideas but even the very phrases he used. "Liberty, equality, fraternity" became the watchword of the Revolution, while "man was born free; everywhere he is in chains" found its echo in Marat's *The Chains of Slavery* (1774).

Jean Paul Marat (1743-1793) was a man of outstanding ability, but the earlier, scientific part of his career is apt to be lost sight of because of the odium which attaches to his later days. He was a medical man who had studied medicine at Bordeaux and practised in Paris, in Holland, in Newcastle and in London; in 1775 he was made an M.D. of

St. Andrews, and in 1777 (by a strange irony of fate!) he was appointed physician to the Comte d'Artois, who later became Charles X. He wrote on medical, philosophical, physical, and, of course, political subjects.

Gradually, however, he deteriorated until he became the apotheosis of all that was most extreme, most cruel, and most bloodthirsty among the Revolutionaries, culminating in the appalling "September Massacres" of 1792; the efficient cause of this in his case, as in that of Rousseau, appears to have been paranoia.[42]

It is true that he had grounds for feeling that he was persecuted and that people were against him, but, even earlier, much of this depended on the insidious onset of his disorder which caused him to exaggerate, as it did in Rousseau, the opposition which some of his expressed beliefs naturally incurred. For the most part—and this also is significant—he played a lone hand, suspicious of the motives even of his Revolutionary colleagues, and, therefore, attacking them. After being imprisoned for a short time, he fled to London, returned and had to live like a rat in sewers and cellars. It was this which gave rise to, or exacerbated, the "horrible skin disease" from which he suffered, and which he treated by means of prolonged warm baths.

Even under these conditions he continued to work, and to write his "L'Ami du Peuple." Also, it was under these conditions that Charlotte Corday found him and stabbed him to death in 1793.

It is difficult to know exactly what the skin disease was from which he suffered except that it was a form of dermatitis which gave rise to extreme irritation and pruritus.[43] There can be little doubt, however, that this played its part in exacerbating his mental irritability. (One is reminded of Judge Jeffreys and his sufferings with vesical calculi.)

It is interesting to note the great discrepancy there is between the different portraits of Marat. Cabanès has pointed this out, saying that Marat "ne ressemblait pas toujours à lui-même, ce qui suffirait à expliquer cette apparente incohèrence."[44] This transcends even the Jekyll & Hyde tradition!

The more we study the field of history the more we are impressed by the prevalence of nervous disorder in one form or another. In the circumstances it is almost allowable to infer that it must have existed in instances where no record has been vouchsafed to us and where there is no reasonable explanation of certain peculiar conduct apart from such a supposition. Those of us whose work has been among the mentally disordered know that this is so of our own times and it may well have been so in the past.

What lessons may we learn from such a study as this? Certainly it is no academic or dry-as-dust matter but one that is everywhere and at

all times replete with human interest. We note that these great people when insane were brought down to the mental level of the typical cases we see and lower than the ordinary, sane individual. Of insanity, as of Death the leveller, we may say that "there is no armour against Fate" and that "it lays its icy hand on kings."[45] The difference is in external things and not in essentials: a Nero, a Caligula, or whom you will, is more of a pest and a scourge because his mad impulses are unchecked, but always there are the insane or the unstable in high places who have to be reckoned with. For such individuals there well might be an indeterminate sentence of "mental instability" which would preclude them from exercising absolute power.

Few people have ever been strong enough mentally to enjoy such unrestricted freedom without its having a prejudicial effect upon them. In a number of instances it has been completely disastrous. "Power, like a desolating pestilence," says Shelley, "pollutes whate'er it touches,"[46] and according to Burke, "The greater the power the more dangerous the abuse." It is even more clear that ability to use such powers is not hereditary. Where exceptional intellectual ability has been present in the parent, amounting to what is usually described as "genius," the offspring have often had to pay the penalty in mental weakness and instability. There is much truth in Lombroso's words, that "We see a progressive degeneration in crime and insanity in relations or children, rather than any conservation or increase of genius."[47]

There is a brighter side to the picture, however, in the realization that much of the best work in the world—in affairs, in literature, in art, etc., has been done by the psychopath or by the psychotic. It is sometimes said that the alienist is bent on incarcerating all those who exhibit eccentricities or any morbid mental symptoms. Such an idea is grotesque, but that too many mad-folk have always been at large, or not under adequate supervision, is surely obvious when we remember the past, consider the present, or even contemplate the future.

It is indubitable that the influence exercised by the insane has been a positive and frequently direful one. In other instances we can only speculate as to the effect.

It seems certain that the course of Roman history would have been different in those early days subsequent to Caesar, and, later, in the time of Rienzi. The "decline and fall" might have been warded off or, perchance, delayed. Would Spain have retained her pre-eminent position if Charles V had been wiser in his marriage and had tried to breed out instead of breeding in the morbid strain? What would the subsequent history of England have been if the House of Lancaster had not been afflicted with mental disorder? Would the American Colonies have been lost had George III and Chatham not both suffered from

manic-deprssive insanity? Would there have been a British-India as we know it had Clive succumbed to that attempt at suicide? These are a few of the questions the answers of which will suggest themselves to all.

Diagnosis of the particular form of insanity from which individuals suffered is clear in a number of instances, while in others we cannot be exact. For the most part I have tried to include cases where some form or degree of insanity was definitely present.

The subject is, as I have already mentioned, an immense one, and therefore, only certain illustrative examples have been selected; they are sufficient, perhaps, to demonstrate the influence which mental disorder has had on certain phases of history.

Another interesting aspect of the matter is that of the effects of epilepsy from which so many well-known people have suffered. Then there are the insane assassins who form quite a large group, such as Jacques Clement, who killed Henri III of France and thus paved the way for the accession to the throne of Henry of Navarre, who was in his turn assassinated by the ill-balanced Ravaillac; John Wilkes Booth, who shot President Lincoln; and John Bellingham who assassinated Spencer Perceval. In this connection it is interesting to note the attempts made on the life of George III by Margaret Nicholson in 1786, who was kept in Bethlem till 1828, and by James Hadfield in 1800, who was also detained in Bethlem, actually for 49 years. Mention must also be made of one who has achieved a singular notoriety in the history of jurisprudence, Daniel McNaghten,[48] who murdered Sir Robert Peel's private secretary, Mr. Edward Drummond, in 1843.

I have purposely eschewed modern examples. There does appear, however, to be sufficient evidence already available to draw conclusions as to the psychopathic nature even of some of our contemporaries. Consider for example that amazing genius Mustafa Kemal (Ataturk), who may well be described as the maker of modern Turkey. If anyone will read attentively that highly appreciative, intimate biography of him entitled "Grey Wolf,[49] he cannot fail to be struck by the morbid element in his make-up, apparently of the manic-depressive type. What will the verdict be in the case of Benito Mussolini? Is he a reincarnation of Cola di Rienzi with some of his ability and more than a trace of his mental instability? Finally, no study of such a subject as this would be complete without reference to that vapouring demagogue, Adolf Hitler, the modern Cleon. That *he* is of a psychopathic or psychotic type seems to be undoubted. Dr. William Brown in a singularly interesting study entitled "The Psychology of Modern Germany," says that Hitler is a "paranoid type" and that he has also exhibited hysterical symptoms, e.g., blindness.[50] Dr. Erwin Pulay also considers that Hitler

suffers from paranoia, and says that "After the last war Hitler spent a long time in a mental hospital."[51] It seems to me that there is a cyclic character about his disorder and that this is reconcilable also with the paranoid trouble.

1. "Psychiatry in Relation to Biography & History." Proceedings of the R. S. Med., Sect. of Psych. (vol. 23: Aug. 1930).
2. (London: 1933 & London: 1936.)
3. Dict. of Psychology, ed. by Howard C. Warren (London: 1935).
4. Individuals who are "the link between madmen of genius, the sane, and the insane properly so called" (Lombroso): they are the cranks, oddities, eccentrics.
5. High-grade mental defective.
6. "Essai sur les Moeurs." Ch. 23.
7. Thomas Parnell (1679-1718). "An Elegy to an Old Beauty."
8. "The Blot on the Brain" (Edinburgh: 1893. p. 151).
9. Ibid., p. 47.
10. Ibid., p. 95.
11. "The two Julias, his daughter and grand-daughter, abandoned themselves to such courses of lewdness and debauchery that he banished them both." (Suetonius, "Caesar Augustus.")
12. "The difficulties of the imperial family and its authority arose not so much from the emperors as from their wives: so that it may truly be said that it was the women who unwittingly dragged down to its ruin the great Julio-Claudian line." "The Women of the Caesars," by Guglielmo Ferrero (London: 1925. p. 218).
13. He is described as "a passionate man maddened by suspicion of all about him"—an interesting example this of inversion of cause and effect, of putting "the cart before the horse" Encyclop. Brit. ("Spain").
14. "Queens of Old Spain," by Martin Hume (Lond.: 1911. p. 14).
15. Macaulay—Historical Essays—"The War of the Succession in Spain."
16. A. S. Rappoport. "Mad Majesties": (Lond.: 1910. p. 70).
17. Motley, "The Rise of the Dutch Republic" (London: 1856. vol. I. pp. 123, 130).
18. "Post Mortem." p. 113.
19. "Lepanto."
20. "Queens of Old Spain." pp. 288 & 294.
21. Ibid. p. 318.
22. Encyclop. Brit. (14th. ed.) "Philip IV."
23. "Le Mal Héréditaire." Vol. I. p. 338.
24. "Queens of Old Spain." p. 525. (The War of the Spanish Succession—on which, and on Charles, see Macaulay's Historical Essays.)
25. Encyclop. Brit. (14th ed.) "Rienzi."
26. Chambers' Book of Days.
27. Lombroso—"The Man of Genius." pp. 266, 267.
28. "The Decline & Fall of the Roman Empire," ed. by J. B. Bury. Vol. 7: p. 279.
29. "Encyc. Brit." (Article—"Rome"—by Prof. Dana C. Munro).
30. "The Man of Genius." pp. 269, 276 & 277.
31. Encyclop. Brit. (14th ed.) "George III."
32. "The Story of Bethlehem Hospital," by the Rev. E. G. O'Donoghue (Lond: 1914. p. 316).
33. "William Pitt, Earl of Chatham" (London: 1938. pp. 12-13): a masterly study and the more valuable from the present point of view because of the consideration given to Pitt's mental disorder.
34. "Chatham," by Frederic Harrison (London: 1905. p. 119).
35. "Encyc. Brit." (14th ed.) "George III."
36. Loc. cit. p. 169.

37. "The Life of Robert First Lord Clive" by the Rev. G. R. Gleig (London: 1907. p. 7).
38. Historical Essays—"Lord Clive."
39. "The Story of Philosophy," by Will Durant, Ph.D. (London: 1929. p. 271).
40. These, and Rousseau's mental trouble generally, are very fully discussed in "Etude sur l'Etat Mental de J. J. Rousseau," by Alfred Bougeault (Paris: 1883).
41. Encyclop. Brit. (14th ed.); "Rousseau." Morley says that "He did more than anyone else at once, to give direction to the first episodes of revolution, and force to the first episode of reaction"—"Rousseau"—Vol. I: p. 3.
42. It has been suggested that it may have been general paralysis of the insane, but paranoia is the more likely diagnosis.
43. This and other matters, including Marat's mental condition, are learnedly and comprehensively dealt with by Dr. Cabanès in his "Marat Inconnu—L'Homme Privé. Le Médecin: Le Savant" (Paris: n.d.).
44. Op cit. p. 2.
45. "Death the Leveller," by James Shirley (from his "Contention of Ajax & Ulysses).
46. "Queen Mab." Canto 3.
47. "The Man of Genius." p. 145.
48. The name is variously spelled: as here given, or McNaughten, or McNaughton..
49. By H. C. Armstrong.
50. Brit. Jl. of Psychology (General Section) Vol. 34. Pt. 2: Jan. 1944.
51. "Historic Events in the Light of Modern Medicine." (London: 1943. p. 25.)

Suggestions for Arranging a Collection of *Medicina in Nummis*

By Bruno Kisch, M.D.

The collecting of medical medals and other numismatic items pertaining to medicine was at first the hobby of only a few collectors; later it became a real branch of scientific numismatics, as well as of the history of medicine,[1] and nowadays it is increasingly the latter point of view which prevails. Public collections and libraries are thus beginning to add a new branch to their field, and it is to be hoped that soon there will be no medical library without a department of *Medicina in Nummis*. It may therefore be timely to think over the manner in which a collection of *Medicina in Nummis* can best be arranged.

That such consideration may be not only timely but necessary seems clear from the interesting article recently published by Ella Wade,[2] who describes a collection of medical medals at the College of Physicians in Philadelphia and the method used in cataloguing this collection. She modestly feels that "our method of cataloguing may be of little value to those in charge of a vast collection, but it is adequate for our purpose." Ideally, of course, there should be one scientific method suitable for use in both small and large collections, but unfortunately the methods recommended even in the best books published to date on medical coins and medals have huge shortcomings. For this reason, the following suggestions, from one who has been a collector in this field for the past 35 years, are advanced as a tentative plan of arrangement; they will necessarily await final elaboration and recognition, perhaps through action by an international convention on the history of medicine.

In the opinion of the writer the most valuable system yet suggested for arranging a collection of this kind is that employed for the Brettauer collection of the University of Vienna, as published in 1937 by Dr. Edward Holzmair.[3] Even this system is not wholly satisfactory, however, and the following remarks, while partly based on the subdivisions which it recommends, point out also the cases in which both it and the Storer catalogue[4] seem to be inadequate.

A few general remarks will be in order before we proceed to the groupings themselves. One must first of all strictly distinguish in each collection and its catalogue between coins on the one hand and medals, badges, and tokens on the other.[5] By "coins" we understand every kind of coinage ever used as money in the marts of trade; "medals" and "badges," of course, were not struck or cast for the purpose of being used as money, and "tokens," while usually monetary, are private coins rather than government issues. Each of these two main groups may appear in each subdivision of our collection, but should be clearly distinguished by such signs as A for coins and B for medals. In the subdivision "persons," for instance, there are both (A) *coins* bearing the portraits of famous physicians, such as the well-known Austrian two-shilling piece with the head of Billroth, and (B) the still more numerous *medals* produced to honor and commemorate famous physicians.

It may be well to emphasize here that in cases where a certain medal was produced in different materials each serious collector should try to obtain if possible every type of it existing. For example, the medal commemorating Blumenbach is present in the writer's collection in an issue of silver, one of bronze, and one of iron. It is clear that coins and medals of a strange material like wood or porcelain also have their place in a collection.

Many items of course might be included in more than one grouping in our catalogue. This problem, however, is one which is common to libraries, and as with books it can easily be solved by the use of cross-references.

As for the actual cataloguing, the first grouping in each collection, in the writer's opinion, should be that of medical allegories and symbols. This group is wanting in the Brettauer collection, where the pieces concerned are included in Group XII d. Even from ancient times, coins occur repeatedly with such symbols. We find many from the Greek and Roman periods mentioned in the great work of Oscar Bernhard.[6] In the writer's collection there is such a medal of more modern times; it was created in silver and bronze by Gerard in the France of the Napoleonic era, and symbolizes music and medicine jointly as having the power to heal maladies and prolong life. Symbols of this kind, especially on antique coins, are a valuable source for the cultural history of medicine.

The next grouping (2) may rightly be the one covering famous persons, which is listed first in the Brettauer catalogue and in Storer's book. Although it may appear to the layman that a group relating to persons is most easily classified alphabetically in a collection, such is not the

case. A series of subdivisions (not made in the Brettauer or Storer reckoning) must be added within this grouping.

There are first those coins and medals which pertain to physicians who were prominent as medical research workers or as practising physicians, and this grouping we may label Subdivision 1. It is a question, however, whether any physician immortalized in a medal for a contribution to some field other than medicine should be included in a collection of *Medicina in Nummis,* especially if the physican, after taking his medical degree, had no further connection with the field of medicine. The German poet Schiller, for example, was a graduate of a medical school, yet no one would regard him as a famous physician; the case is the same with the botanist Linne, the novelist Eugène Sue, the poet Keats, the author Rabelais, and, in more modern times, the politician Georges Clemenceau and the first President of the Chinese Republic, Sun Yat-Sen. The question becomes less difficult with men who contributed both medically and non-medically to the welfare of mankind, even though they may be better known for contributions outside the medical field, as in the case of the physician-poet Oliver Wendell Holmes.

A still more knotty problem in this grouping concerns itself with men who never took a medical degree, but who contributed something remarkable to theoretical or practical medicine. Certain medical quacks or healers, like Priessnitz and Father Kneipp for example, have become famous though they possessed no medical degree, and they should have a subdivision by themselves. It seems, moreover, that a man like the German poet Goethe definitely deserves a place in our collection because, even though not a medical graduate, he contributed facts of high importance to medicine in the fields of anatomy, comparative morphology, and physiology. Into this group of non-graduate physicians would fall in addition all the scientists, like Roentgen, Liebig, and the Curies, who contributed the most fundamental facts of physics and chemistry used in modern medicine.

It appears necessary, therefore, to subdivide the group "Persons" in our collection into (1) graduate physicians who were prominent in the field of medicine, (2) healers holding no medical degree, (3) non-medical men famous for their contributions to medicine, and if it is really decided to include this group, (4) physicians famous for non-medical contributions. Furthermore, here and in each of the following groups it seems reasonable to include as separate subdivisions (5) dentists, (6) veterinarians, and (7) pharmacists, for no collection of *Medicina in nummis* can be complete without these groups, and it is more logical to add each of them at the proper place in the system than to put them in separate general groups which would then require

similar subdivisions. Within the subdivisions I deem it preferable to put all the personal coins and medals in alphabetical order and not to divide them again into nationalities, as Duisberg[7] did. Such additional subdividing only creates unnecessary difficulties, and the name of the person can be found easily enough in an alphabetically arranged index. I would follow Rudolphi[8] in adding data on the life of each person.

It may be pointed out here that the best kind of arrangement for our collection is perhaps the decimal system used in libraries. To avoid mistakes, numbers higher than nine should be put in brackets, or Roman figures should be used, as in item 6.(10) or 6.X below. In the index below the letter A before the group number always means, as indicated above, that the piece in question is a coin, the letter B always signifies a medal or token. Accordingly, since Group 2 covers medical persons, each medal representing a physician would belong in B 2. Furthermore, because according to our suggestion group B 2 has to be subdivided, a medal struck in commemoration of R. Virchow belongs in group B 21, a coin with the portrait of Sun Yat-Sen in A 24, and a medal of Goethe in B 23.

The index concluding the present paper gives the framework for groupings which may later be subdivided more elaborately by an international conference. It will not be necessary here to discuss in detail all the groupings, but I should like to make certain observations on some of them.

In Group 3, institutions fostering the advancement of medicine are subdivided into (a) schools (3.1); (b) professional societies and their conventions (3.2); and (c) medical exhibitions (3.3). Universities form the first group of schools (31.1), for each complete university contains a medical faculty and, in addition, each well-trained physician must acquire before graduation an indispensable background of knowledge from non-medical faculties of the university. Medical schools and medical faculties together with schools of surgery and obstetrics form the next group, 31.2, which like 31.1 has to be subdivided alphabetically according to the countries. In this reckoning the Austrian medical faculties would be numbered 312.1, and the separate schools or faculties in a country would form the next subdivision; the medical faculty of the University of Graz (Austria), for example, would be 3121.2, and in turn medals issued by this faculty would be subdivided according to the purpose for which they were issued (for details see Index). We may mention here passport medals or tokens, as 31212.5, which admit the bearer, whose name is usually engraved theron, to certain institutions of the faculty. Some are well-known and not very rare, such as those issued in bronze in the seventeenth and eighteenth centuries which admitted medical students in Amsterdam to the botanical gardens;

others, in silver, like the one in the Brettauer collection and the one in the collection of this writer, are exceedingly rare.

Some remarks are also necessary to our Group 4. I regard as belonging to a collection of *Medicina in nummis* only such coins and medals connected with childbirth as refer to physiological facts—for example, to the birth of twins or triplets, to pregnancy or obstetrics, etc. The plentiful group of coins and medals referring to the birth of a royal prince or princess belong rather in a political or historical collection and have in my opinion no place in a collection of *Medicina in nummis*. However, mention should be made under Group 41 of other places where *Obstetricia in nummis* can be found.

The same is true for the coins and medals referring to death. I exclude from my collection all coins and medals referring to the death of a ruler or a private person unless the cause of death or the kind of sickness is mentioned on the coin or is an historically well-known fact (we may cite the laryngeal carcinoma of the German Emperor Frederic III.). However, medals commemorating the recovery of an emperor or private person from a disease have a rightful place in our collection even if we do not know the kind of disease. If we know its nature, cross-references should be used, and it is then unimportant for all practical purposes whether we bring, for instance, the different medals celebrating the recovery of the Empress Maria Theresa from smallpox under B 47 (recovery from disease) or under B 512 (smallpox).

Furthermore, from Group 44 (Erotica) I would exclude all the coins and medals referring only to the political or historical facts of marriage of any princes or private persons. Excluded also would be the lovely numismatic group of love and wedding medals where love is presented as a mere idealistic and romantic phenomenon of human psychology.

Groups 51 and 52 are groups for which the basic outline was given by Pfeiffer and Ruhland[9] in their classical book *Pestilentia in Nummis*. According to the historic facts, under "plague" or "pest" we must understand not only the disease produced by *bacillus pestis* but every epidemic disease called plague or pest in the pre-bacteriologic era. In this group (511.1) coins play an important part. There are, for example, the famous Pestthaler of Joachimsthal in Bohemia, and there are also numerous medals, some general to commemorate the plague and to be used as charms against it, others specific and alluding, for example, to the last European epidemic of bubonic plague from 1711 to 1714. Group 51.5 includes the coins used as money in the leper-colony in the Philippines. As for 5.3, I admit into my collection only pieces that mention victims of a certain accident or war, like the medals com-

memorating the victims of the terrific fire at the Ring-Theater in Vienna in 1881; I exclude coins and medals referring to wars, sieges, and victories without mention of victims.

In Group 6 I combine prophylaxis and therapy. This seems to me to be the proper place for all activities important for the preservation and restoration of health. The Index should be self-explanatory. Group 6.3 covers food supply and distribution in general, including the ancient and modern coins and medals of Annona. Group 6.5 covers charitable distribution of food, drugs, and utilities to the poor and needy. I may also state that medals on sport belong in Group 6 only in so far as they refer to sport and its advancement in general and as a health-preserving activity. Therefore, I exclude from my collection the innumerable pieces referring to special sport clubs or sport events. The Olympic games and government awards intended to encourage sport activities are exceptions.

In Group 7 I include the private money issued by certain hospitals and used by inmates, such as the money used at the Budapest Military Hospital in the eighteenth century.

In Group 8.4 should be included, in my opinion, not only awards for medical care rendered to wounded soldiers in wartime but also the awards dedicated to wounded soldiers themselves. This second grouping, hitherto usually neglected by collectors of *Medicina in nummis,* would include the American Purple Heart and the Austrian Medal which was awarded to soldiers wounded in the last World War together with different ribbons to indicate how many times a soldier had been wounded. Similar emblems were given to wounded soldiers of World War I by the German Government.

Group 9 seems to me unjustly neglected by collectors of *Medicina in nummis* in spite of its high interest for the cultural history of medicine.[10] In this group of professional medical tokens the apothecary weights in coin form are neglected even in the Brettauer collection. They carry an inscription of the weight they represent and the name of the factory which produced them. The purpose of a professional token is usually only to advertise and solicit customers, but certain types of apothecary weights are exceptions, and the differentiation may be seen in our Groups 2.7 and 9.2.

The following Index may be somewhat discouraging for the beginner who realizes on reading it that even a lifetime of collecting may result only in a very incomplete collection. It is the hope of the writer, however, that it may encourage collectors to specialize in one of the many fields of *Medicina in nummis.* Such specialization would bring its reward of joy to the collector and might furnish a valuable contribution to our knowledge of the history of medicine.

INDEX FOR A COLLECTION OR CATALOGUE OF *MEDICINA IN NUMMIS*

An A before each number signifies that the piece in question is a coin, a B that it is a medal or token.

1 Symbolic and Allegorical Pieces
2 Persons
  2.1 Graduate physicians famous for their contributions to medicine
  2.2 Healers holding no medical degree
  2.3 Non-medical men famous for contributions important to medicine
  2.4 Graduate physicians famous for their contributions in a non-medical field
  2.5 Dentists
  2.6 Veterinarians
  2.7 Pharmacists
  Within itself, each of these groups should be arranged in alphabetical order.
3 Educational Institutions Important for the Advancement of Medicine
  3.1 Schools
    31.1 Universities
    Subdivided alphabetically according to countries, e.g.,
      311.1 Austrian universities
      The next subdivision brings the separate universities of a country in alphabetical order, as
        3111.1 University of Czernowitz
        3111.2 University of Graz, etc.
        Each such group has to be subdivided according to the topic of the coin or medal. If, for instance, B 3111.2 covers all medals issued by or concerning the University of Graz, the subdivision could be:
          B 31112.1 Medals commemorating the University of Graz itself
          B 31112.2 Medals issued by the University of Graz commemorating members of its staff
          B 31112.3 Award-medals issued by the University of Graz
          B 31112.4 Medals issued by the University of Graz in honor of persons not members of the University
          B 31112.5 Passport medals and tokens of the University of Graz
    31.2 includes medical faculties of any university or of medical schools independent of universities and can be subdivided exactly as 31.1. For example, B 3121.2 would pertain to medals issued by the medical faculty of the University of Graz, and this entire group should be subdivided exactly as was Group 3111.2 above.
    31.3 Schools of Surgery proper
    31.4 Schools of Obstetrics and Midwifery
    31.5 Schools of Nursing
    31.6 Schools of Dentistry
    31.7 Schools of Veterinary Medicine
    31.8 Schools of Pharmacy
      Each of these groups should be divided exactly as shown under 31.1.
  3.2 Medical academies, medical societies, and their conventions.
  Here again a subdivision is necessary alphabetically according to countries, so that beginning with 32.1, international institutions, we would have
    321.1 International medical institutions
    321.2 International institutions for dentists
    321.3 For veterinarians
    321.4 For pharmacists
    The next subdivision of each of these groups would list the special topics, such as
      3211.1 International Society of the History of Medicine

3211.2 International Society of Physiology, etc.

and then the national societies would follow in alphabetical order subdivided for each country exactly as in 321.

The next group covers as 3.3 exhibitions of medical interest. Here again 33.1 would mean international exhibitions, and the national exhibitions would follow in alphabetical order by countries. Each of these groups should be subdivided as

331.1 International medical exhibitions dealing with hygiene, food, nursing, First-Aid, etc.

331.2 International exhibitions of dentistry

331.3 International exhibitions of veterinary medicine

331.4 International exhibitions of pharmacy

Each of these groups could again be subdivided into

3311.1 Medals commemorating an international medical exhibition

3311.2 Medals issued by such an exhibition and commemorating famous persons or facts

3311.3 Award-medals issued by such an exhibition

Group 4 commemorates the physiological facts of life:

4.1 Birth
4.2 Wet nursing
4.3 Sleep
4.4 Erotica
4.5 Fertility
4.6 Longevity
4.7 Recovery from sickness
4.8 Death
4.9 Human races

After Group 2, the most important and interesting group from an historical point of view is Group 5, which covers pathological signs and symptoms, with their causes. Here it seems logical to differentiate contagious (5.1, 5.2) from non-contagious (5.3) diseases. Group 5.1 is followed by 5.2 according to the wise suggestion of Pfeiffer and Ruhland that the real and alleged factors of plagues be brought together in one group.

5.1 Contagious and transmittable diseases *(Pestilentia in Nummis)*

51.1 Plague (Pestis)

511.1 Commemoration of plague and of certain epidemics of it

511.2 Plague hospitals

511.3 Touch pieces and coin-charms against plague

51.2 Smallpox

512.1 Inoculation

512.2 Vaccination

512.3 Awards for vaccination

51.3 Cholera

51.4 Yellow fever

51.5 Leprosy

51.6 Tuberculosis

51.7 Other contagious or transmittable diseases

5.2 covers the known or alleged factors producing, influencing, or propagating contagious or transmittable diseases:

52.1 Bacteria and bacteriology; other pathogenic parasites

52.2 Famine and food usury

52.3 Flood and hail

52.4 Dry summers, hot winters, etc.

52.5 Animals destroying the crops (mice, locusts etc.)

52.6 Meteorological facts (comets, astrology)

Each of these numbers 51 and 52 and their groups may be subdivided geographically and chronologically, and the different countries and their towns put in alphabetical order.

5.3 Non-contagious diseases and other factors which produce illness and death

53.1 Accidents (fire, war, etc.)
53.2 Cancer
53.3 Oculistica
533.1 Blindness and care of the blind
533.2 Eyeglasses
53.4 Otiatrica
534.1 Deafness
534.2 Deaf-mutism and care of patients so afflicted.
53.5 Freaks, cripples, dwarfs, etc.
53.6 Diseases forming stones
53.7 Gout

Group 6 covers prevention and healing of diseases and all institutions devoted to this aim.

6.1 Societies and institutions concerned with hygiene and prevention of disease (sanitation, drainage, cleanliness, food supervision, etc.)
6.2 Water supply
6.3 Food supply and distribution
6.4 Balneology; spas and public baths
6.5 Aid for the sick, poor, and infirm (exclusive of hospitals and homes)
6.6 Charitable congregations and their activities
6.7 Care of the dying and dead; burials
6.8 Abstinence and temperance; alcoholism and other addictions, and the crusade against them.
6.9 Sport as a sanitary activity.
6.(10) or 6.X Special therapeutic procedures (phlebotomy, enemas, etc.)

Group 7 covers institutions which take care of sick and disabled people in certain places dedicated to such purpose, including asylums for the poor and needy:

7.1 General hospitals and dispensaries
7.2 Maternity hospitals
7.3 Children's hospitals and orphanages
7.4 Lunatic asylums
7.5 Military hospitals
7.6 Convalescent homes
7.7 Homes for the aged
7.8 Homes for the poor and needy
7.9 Other special hospitals and places of treatment

Each of these groups in alphabetical order according to the places where the institutions are located.

Group 8 covers life-saving and life-saving institutions.

8.1 Red Cross and similar organizations especially organized for help in war-time
81.1 Red Cross
81.2 Red Half-Moon
81.3 Red Magen David
Each of these subdivided alphabetically according to countries, as
811.1 International Red Cross
8111.1 Commemorative medals
8111.2 Awards
8111.3 Medals for the purpose of raising funds
8.2 Coins and medals of the Johanitter-Orden
8.3 General commemoration of medical work in war-time and in military formations (army, etc.)
8.4 Medals and other awards for medical work in war-time and in military formations

Each of these groups should again be subdivided alphabetically according to countries, as

84.1 America
841.1 Awards for help rendered to wounded soldiers
841.2 Awards for being wounded in action

8.5 Protection of war invalids and their families, including help to widows and orphans of such men
8.6 Protection of war prisoners
8.7 Civil life-saving
87.1 General nursing and life-saving
87.2 Life-saving from flood and shipwreck
87.3 Life-saving from fire
8.8 Protection of children (including school hygiene)
8.9 Protection of animals

Group 9 covers professional medical tokens and medals
9.1 Advertisements by persons for the purpose of soliciting customers
91.1 Physicians
91.2 Dentists
91.3 Veterinarians
91.4 Healers and quacks
9.2 Advertising by druggists, inventors of medical products, salesmen and factories selling medical products
9.3 Advertising of remedies and charms
9.4 Advertising of other pharmaceutical and sanitary products
9.5 Advertising of other merchandise related to health and prevention of sickness (food, clothing, etc.)
9.6 Apothecary weights

(10) or X Patrons of medicine and medical charms
(10) or X.1 Ancient medical patrons and their sanctuaries
(10)1.1 or X1.1 Greeks and their colonies
(10) 1.2 or X1.2 Romans and their colonies
(10)1.3 or X1.3 Others
(10) or X.2 Medical patrons and their sanctuaries in Christianity, both in alphabetical order
(10) or X.4 Cabalistic medals for medical purposes (charms)
(10) or X.5 Medals composed of alchemistic material and used as medical charms
(10) or X.6 Other coined medical charms

REFERENCES

1. KISCH, BRUNO. Numismatic Review 1:28, 1943.
2. WADE, ELLA. Bull. of the Med. Libr. Assoc. 32:177-213, 1944.
3. Katalog der Sammlung Dr. Josef Brettauer Medicina in Nummis. Wien, 1937.
4. STORER. Medicina in Nummis. Boston, 1931.
5. J. B. MCNAUGHT. Stanford Med. Bull. 2: (May) 1944.
6. Griechische und Römische Münzbilder und ihre Beziehungen zur Geschichte der Medizin. Zurich, 1926.
7. DE DUISBERG, C. L. C. A. Rudolphi Numismati Virorum de Rebus Medicis et Physicis Meritorum. Dantisci, 1862.
8. RUDOLPHI, C. A. Index Numismatum. Berlin, 1825.
9. PFEIFFER, L. and RUHLAND, C. Pestilentia in nummis. Tübingen, 1882.
10. KISCH, BRUNO. Numismatic Review 2: (Oct.) 1944.

BIBLIOTHECA MEDICA

Viri Clariſſimi

Nathanis Paget, M. D.

Cui adjiciuntur quamplurimi alii Libri *Theologici*, *Philoſophici*, &c.

Quorum omnium Auctio habebitur *Londini*, ad Inſigne *Pelicani* in Vico vulgò dicto *Little-Britain* 24 Die *Octobris* 1681.

Per *Gulielmum Cooper* Bibliopolam.

LIBRARY
SURGEON GENERAL'S OFFICE
JUN.-8--1904
186790

The Catalogues are ready to be Diſtributed *Gratis* at the *Pelican* in *Little-Britain*, *London*.

FIG. 1. Title page to Dr. Nathan Paget's auction catalogue of his books.

Dr. Paget's Library

By JAMES H. HANFORD

AMONG the rarities of the Army Medical Library is the auction sale catalogue of the books of Dr. Nathan Paget, dated October 24, 1681[1] (fig. 1). Paget is remembered in medical history as one of the fellow workers in the Royal College of Physicians and Surgeons who contributed by their preliminary reports to Francis Glisson's pioneering study of the Rickets. His name is also familiar to students of John Milton as that of the friend and counsellor who helped the poet in his later years. The catalogue amplifies our knowledge both of the doctor and the man. It also helps round out the general picture of the English physician book-collector of the seventeenth century, a breed already honored by the names of Dr. Francis Bernard, Sir Theodore Mayerne and Sir Thomas Browne.[2]

The main facts regarding Paget and his friendship with Milton were collected by the poet's biographer, David Masson.[3] Born in 1615, a son of a rector in Cheshire and nephew of a well-known non-conformist divine, Nathan Paget was graduated M.A. from the University of Edinburgh in 1638 and took a medical degree at Leyden in the following year. The title of his thesis, *Disputatio de Peste,* explains the interesting collection of books and pamphlets on the plague contained in his library. The British Museum has a copy of this forgotten document. Paget's professional career ran a normal course for those times and bears all the outward evidences of success. He was elected a fellow of the College of Physicians in 1646. The Council of State nominated him Physician to the Tower of London on December 31, 1649. He received a series of honors from the College of Physicians, being appointed Censor five times between 1655 and 1678 and chosen to deliver the Harveian oration in 1664. He died in January, 1679, leaving to the College a legacy of twenty pounds a year for thirty years.

It is not clear how much Paget individually contributed to the scientific work of Glisson. The facts, as we know them from the preface of the first edition of *De Rachitide* (1650), are these. In 1645 a group of eight London physicians, meeting privately, presented papers contain-

ing their several observations of cases of the Rickets. They decided to publish the results of their discussions and commissioned three of their number, Francis Glisson, George Bate, and Assuerus Regimorter, to prepare a volume for the press. These men divided the work under various heads and assigned a portion to each, but when Glisson submitted his section they changed the plan and entrusted the whole work to him, with the continued co-operation of the rest. Paget's name occurs among those listed as belonging to the original body of collaborators.

This activity marks Paget as being associated with the leading medical participants in the new scientific movement of the times. Glisson himself (1597-1677) was a senior member of the body of "learned and inquisitive persons" who from about the year 1645 constituted the philosophical Society or "Invisible College" in London. George Bate was an early fellow of the Royal Society. Jonathan Goddard, another of the eight contributors to the original study, was associated with Glisson in the Philosophical Society and identified in an important way with the promotion of scientific activity in this period. His career is parallel to Paget's, though more distinguished.[4] Born in 1617 and M.D. at Oxford in 1643 he became fellow of the Royal College of Physicians in 1646, Galstonian Lecturer in 1648, Censor many times and President Elect in 1672. He was physician to the Parliamentary Army, and to Oliver Cromwell, warden of Merton College in 1651, a member of the Little Parliament and of the Council of State in 1653, and finally (in 1655) Professor of Physic at Gresham College. Meetings of the Philosophical Society were held in his house and he maintained a laboratory at Gresham College for the use of Royal Society members. He is credited with being the first Englishman to make telescopes and is said to have died, in true Baconian fashion, on his way home from a meeting of virtuosi in 1674.

The intellectual quality of this group speaks well for Paget and makes his acquaintance with the brilliant, learned, and scientifically curious Milton seem very natural. We have only a few details of their relationship but it is easy to conjecture a considerable degree of intimacy. Paget arranged a third marriage for Milton with Elizabeth Minshull, one of Paget's own kinswomen. Edward Phillips, Milton's nephew and early biographer, speaks of the doctor as Milton's "old friend." Again we hear of Paget in connection with the introduction to Milton of the Quaker Thomas Ellwood as his pupil and amanuensis. "By mediation of my friend Isaac Pennington with Dr. Paget," writes Ellwood, "and of Dr. Paget with John Milton, was I admitted to come to him."

These events fell in 1662 and 1663, Milton's fifty-fifth and fifty-sixth years, when he was totally blind, comparatively poor, and probably more or less arthritic. The chances are that Paget stuck by him till his death twelve years later, whether in the rôle of physician or only in that

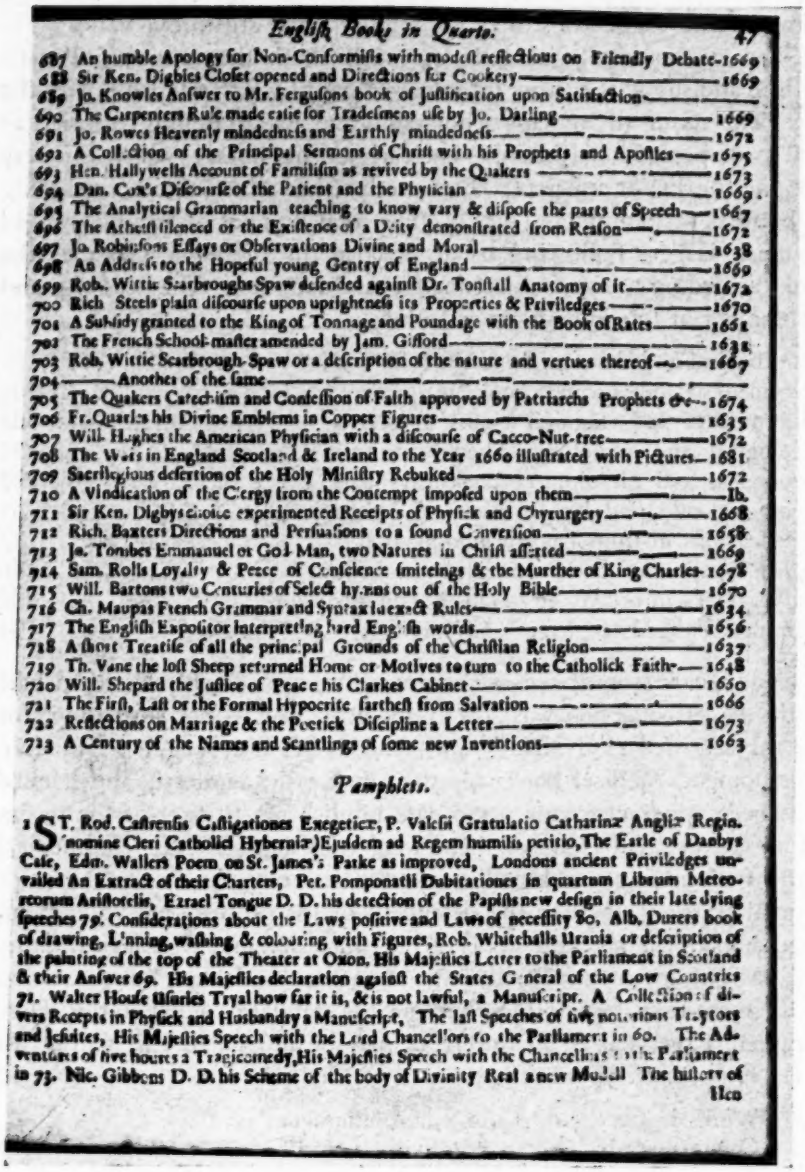
of friend and patron we do not know. It used to be thought that Paget was the author of one of the first biographies of Milton, which contains a rather exact account of his medical symptoms, and this ascription, in spite of other suggestions of recent scholars, may still prove valid.[5]

The auction catalogue tells us much about the range of Paget's reading and suggests further inferences regarding his friendship with the poet. The stamp of humane scholarship and wide ranging curiosity, as well as of professional interest, is clearly on his library, which is a very fine one for that or any time. There are listed in all 2178 lots,[6] including 34 bundles of pamphlets (fig. 2). The total number of volumes would be much larger. Following usual practice the catalogue classifies the books according to size, subject matter, and language. The headings and the number of lots in each are as follows:

Latin medical and chemical books in folio	130
Latin medical and chemical books in quarto	206
Latin medical and chemical books in octavo	480
Theological and philological books in folio	255
Theological and philological books in quarto	282
Theological and philological books in octavo, etc.	68
English books in folio (mostly non-medical)	71
English books in quarto (mostly non-medical)	240
English books in octavo, etc. (mostly non-medical)	412
Pamphlets (mixed languages and subjects)	34

As appears from the above enumeration, considerably less than half of the Paget collection was strictly medical. This is not surprising, for the subject, vast as it already was, had as yet only begun its modern development. Medical books repeated each other endlessly and it must have been apparent to any up to date English practitioner of the seventeenth century that many of them were worthless. Besides, the medical man of those days was broadly educated and more apt to be a man of general learning, even to the detriment of his professional equipment. Paget had all the necessary tools of his profession and a great deal more. The basis of any such collection was of course the classics, but possession of the mere texts was nothing without the standard commentaries. How complete Paget was in this category may be judged by this partial list of his Hippocratic items.

(1) Works in Greek and Latin, ed. Anutius Foesius, 1624.
(2) Commentary by Jacobus Foroliviensis, 1548.
(3) Works in Latin, with commentary by Johannes Marinellus, 1610.
(4) Works in Greek and Latin with commentary and illustrations by Theodore Zwinger.
(5) Commentaries on various works by Cardan, 1564-1570.
(6) Works in Latin, translated by Fabius Calvus Rhan, 1525.



English Books in Quarto. 47

687 An humble Apology for Non-Conformiſts with modeſt reflections on Friendly Debate-1669
688 Sir Ken. Digbies Cloſet opened and Directions for Cookery——1669
689 Jo. Knowles Anſwer to Mr. Fergusons book of Juſtification upon Satisfaction——
690 The Carpenters Rule made eaſie for Tradeſmens uſe by Jo. Darling——1669
691 Jo. Rowes Heavenly mindedneſs and Earthly mindedneſs——1672
692 A Collection of the Principal Sermons of Chriſt with his Prophets and Apoſtles——1675
693 Hen. Hallywells Account of Familiſm as revived by the Quakers——1673
694 Dan. Cox's Diſcourſe of the Patient and the Phyſician——1669
695 The Analytical Grammarian teaching to know vary & diſpoſe the parts of Speech——1667
696 The Atheiſt ſilenced or the Exiſtence of a Deity demonſtrated from Reaſon——1672
697 Jo. Robinſons Eſſays or Obſervations Divine and Moral——1638
698 An Addreſs to the Hopeful young Gentry of England——1669
699 Rob. Wittie Scarbroughs Spaw defended againſt Dr. Tonſtall Anatomy of it——1672
700 Rich Steels plain diſcourſe upon uprightneſs its Properties & Priviledges——1670
701 A Subſidy granted to the King of Tonnage and Poundage with the Book of Rates——1651
702 The French School-maſter amended by Jam. Gifford——1638
703 Rob. Wittie Scarbrough-Spaw or a deſcription of the nature and vertues thereof——1667
704——Another of the ſame——
705 The Quakers Catechiſm and Confeſſion of Faith approved by Patriarchs Prophets &c——1674
706 Fr. Quarles his Divine Emblems in Copper Figures——1635
707 Will. Hughes the American Phyſician with a diſcourſe of Cacco-Nut-tree——1672
708 The Wars in England Scotland & Ireland to the Year 1660 illuſtrated with Pictures—1681
709 Sacrilegious deſertion of the Holy Miniſtry Rebuked——1672
710 A Vindication of the Clergy from the Contempt impoſed upon them——Ib.
711 Sir Ken. Digbys choice experimented Receipts of Phyſick and Chyrurgery——1668
712 Rich. Baxters Directions and Perſuaſions to a ſound Converſion——1658
713 Jo. Tombes Emmanuel or God-Man, two Natures in Chriſt aſſerted——1669
714 Sam. Rolls Loyalty & Peace of Conſcience ſmitelings & the Murther of King Charles-1678
715 Will. Bartons two Centuries of Select hymns out of the Holy Bible——1670
716 Ch. Maupas French Grammar and Syntax in exact Rules——1634
717 The Engliſh Expoſitor interpreting hard Engliſh words——1656
718 A ſhort Treatiſe of all the principal Grounds of the Chriſtian Religion——1637
719 Th. Vane the loſt Sheep returned Home or Motives to turn to the Catholick Faith——1648
720 Will. Shepard the Juſtice of Peace his Clarkes Cabinet——1650
721 The Firſt, Laſt or the Formal Hypocrite fartheſt from Salvation——1666
722 Reflections on Marriage & the Poetick Diſcipline a Letter——1673
723 A Century of the Names and Scantlings of ſome new Inventions——1663

Pamphlets.

1 S T. Rod. Caſtrenſis Caſtigationes Exegeticæ, P. Valeſii Gratulatio Catharinæ Angliæ Regiæ. 2 nomine Cleri Catholici Hyberniæ) Ejuſdem ad Regem humilis petitio, The Earle of Danbys Caſe, Edm. Wallers Poem on St. James's Parke as improved, Londons ancient Priviledges unvailed An Extract of their Charters, Pet. Pomponatii Dubitationes in quartum Librum Meteorum Ariſtotelis, Ezrael Tongue D. D. his detection of the Papiſts new deſign in their late dying ſpeeches 79. Conſiderations about the Laws poſitive and Laws of neceſſity 80. Alb. Durers book of drawing, Limning, waſhing & colouring with Figures, Rob. Whitehalls Urania or deſcription of the painting of the top of the Theater at Oxon. His Majeſties Letter to the Parliament in Scotland & their Anſwer 69. His Majeſties declaration againſt the States General of the Low Countries 71. Walter Houſe Uſuries Tryal how far it is, & is not lawful, a Manuſcript. A Collection of diverſ Receipts in Phyſick and Husbandry a Manuſcript, The laſt Speeches of five notorious Traytors and Jeſuites, His Majeſties Speech with the Lord Chancellors to the Parliament in 60. The Adventures of five houres a Tragicomedy, His Majeſties Speech with the Chancellors to the Parliament in 73. Nic. Gibbons D. D. his Scheme of the body of Divinity Real a new Model The hiſtory of

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FIG. 2. Page 47 of Dr. Nathan Paget's auction catalogue of his books.

(7) Discourses on *De Aere, Aquis et locis,* by Jo. Heurn, 1597.
(8) The Prognostics in Greek and Latin, with commentary by Jo. Heurn, 1597.
(9) The *De Victus Ratione,* with Heurn's commentary, 1609.
(10) The Nature of Man, with Heurn's commentary, 1609.
(11) Oribasius' Commentaria on the Aphorisms, n.d.
(12) *De Flatibus* in Greek and Latin, with commentary by Adr. Alemani, 1557.
(13) Aphorisms, with Heurn's commentary, several editions.
(14) Aphorisms, edited by Fr. Oggler, 1629.

This group of Hippocratica may seem disproportionate in a library of the size; and perhaps it represents a special interest. Similar though less extensive lists could be made for Galen and Averroes. Probably Paget was doing what any skilled collector in the field would do, combining a certain degree of specialization at what seemed to him key points with good general coverage. For some reason neither Dioscorides nor the Roman Celsus is represented in the collection. Of the standard medical writers of modern times Vesalius is similarly missing. Otherwise the collection seems very complete and the absence of the numerous seventeenth century English translations and digests of continental writers is evidence of Paget's selectiveness.

But these generalizations give only a faint idea of the variety and importance of Paget's scientific books. To represent the collection adequately in this respect would require a listing of many small packets on one topic or another and of individual items from a very wide field of medical, chemical, mathematical, and related knowledge. Paget had assembled a number of volumes, for example, on wine and liquor making, including manuscripts. This was a favorite topic in the early days of the Royal Society. He seems to have been interested in nutrition and has both general treatments of the subject and the following curious case histories of persons who went a long time without food.

The Nonsuch Wonder of Martha Taylor's Fasting above a Year;
History of a Maiden of Confolens Fasting Three Years;
A Discourse of the Prodigious Abstinence of Martha Taylor a Derby-Shire Damsel, 1669;
News from Darbyshire of Martha Taylor

There is also the collection of plague literature already mentioned.

Although many of the medical books bear dates before 1600 there are enough belonging to the new epoch of English discovery to show Paget well abreast of his age. Harvey's *De Motu Cordis* of 1628 is naturally there, included in a lot of related materials. So also are Glisson's various publications from 1650 to 1667. The purchase of

W. Charleton's classic work on Scurvey, published in 1672, must have been made toward the end of Paget's life. Sydenham's *Observationes* and *De Curatione* (1676) belonged also to his later years. Contemporary mathematics are represented, not only by Oughtred and Descartes, but by a number of famous writers actually younger than Paget himself: Wallis (1616-1703); John Newton (1622-1678); and Isaac Barrow (1630-1677).

Such holdings as these are what we might have expected of a man like Paget, who worked with Goddard, Bate, and Glisson, and was presumably well acquainted with their associates in the Royal Society. A more remarkable phase of his book buying career was his persisting to old age in the acquisition of mystical, heretical, and sectarian literature. Omitting the alchemical material as belonging to the fringes of science and having a legitimate place in a scientific library, let us look at Paget's extraordinary shelf of works by the great Italian rationalist and heretic, the father of modern anti-Trinitarian theology, Faustus Socinus. Here is the list of his holdings.

(1) *De Justificatione,* 1616.
(2) *Praelectiones Theologicae,* 1627.
(3) *De Deo, Christo, et Spiritu Sancto,* 1611.
(4) *Defensio Animadversionum de Trino et Uno Deo,* 1618.
(5) *Responsio ad Jac. Wiekum de Divinitate.*
(6) *Ad Amicos Epistolae et Quaestiones de Rebus Divinis,* 1618.
(7) *Responsio ad Jac. Palueologi Defensionem de Magistratu Politico,* 1627.
(8) *Disputatio de Jesu Christi Invocatione contra Fr. Davidem,* 1626.
(9) *Tractatus de Ecclesia,* 1611.
(10) *De Diversis Materiis ad Christianam Religionem Pertinentibus,* 1618.
(11) *Lectiones Sacrae,* 1618.
(12) *Disputatio de Loco D. Pauli Apostoli Cap. 7mo ad Rom.,* 1612.
(13) *Disputationis Defensio Adversus Reprehensiones N. M.,* 1618.
(14) *Disputatio de Adoratione Christi.*
(15) *Disputatio de Baptismo Aquae,* 1613.
(16) *Lectiones Sacrae de Authoritate Sacrarum Literarum,* 1618.
(17) *Explicatio Concionis Christi in Quintum, Sextum, et Septimum Caput D. Mathaei.*

The presence of this phalanx of Socianism side by side with the more orthodox theologians would seem to warrant Paget as a libertine in thought, perhaps even as one of those discoursing wits who, as Bacon said, count it a bondage to fix a belief. We have to consider also his collection of the works of the German mystic and spiritual reformer, Jacob Boehme. It is unnecessary to itemize the group. I count sixteen separate titles or editions of printed books by Boehme. The large majority of these is in English, the rest in Latin, German or Dutch. There is one

Dutch (German?) manuscript. He made a logical extension of this development in the purchase of literature by and related to the Quakers. Their central doctrines are akin to those of Boehme, who is counted by such an authority as Dr. Rufus Jones one of the continental predecessors. Paget had about as many Quaker items as he did Boehmenist, some of them bearing dates as late as 1674. The writings of George Fox figure prominently in the list. Here as elsewhere Paget bought on both sides of the question. The titles make better reading than the pamphlets themselves. I cite a few of them exactly as given in the catalogue.

A Battle-door of 53 Languages & Speeches to justify the Quakers use of *Thou* & *You*, by Geo. Fox.
The Heart of New England rent at the blasphemy of the Quakers.
Naked Truth and Experiences of Is. Penington.
Geo. Fox his Vindication of Womens Meetings in the World.
The Christian a Quaker, the Quaker a Christian.
Is. Peningtons Eccho from the Deep or the Principles & Practises of mad-Folk.
Hen. Hallywells Account of Familism as revived by the Quakers.
An Answer to the Quakers pretended charity.
Is. Penington a Voice out of thick darkness to Christians.

The picture afforded by the Jacob Boehme and George Fox collections is confirmed by the presence of much scattered kindred material. There are, on the one hand, such authors as John of the Cross, and on the other, English pamphleteering fanatics of various breeds—the "numerous hosts of dreaming saints"—and their orthodox castigators. Paget had no such mass of this literature as George Thomason or even the Earl of Bridgewater, but he had more than enough for an average physician. Milton in *Areopagitica* speaks of the "flowery crop of knowledge" which proceeded from the presses of the 1640's at such a rate as to make almost all other books unsaleable. Some cultivated people who were themselves unaffected by the currents of revolution and mad reform knew the interest of this literature. Paget may have read it in a spirit of mere curiosity, or, like Robert Burton, the anatomist of melancholy, as a body of clinical data regarding the vagaries of the human mind. On the other hand, he may have been personally attracted by these beliefs. In any case a community of interest with Milton is clearly indicated. For the poet held unorthodox views on the Trinity, talked like a Quaker or a Boehmenist about the inner light, and had many acquaintances among the sectaries. There is a touch of scientific objectivity in one of Milton's comments which, with its medical illustration, may reflect his conversations on these subjects with men like Paget, as well as his reading in the *Anatomy of Melancholy*.

Seeing that the sort of men who follow Anabaptism, Familism, Antinomianism and other fanatic dreams (if we understand them not amiss), be

such most commonly as are by nature addicted to religion, of life also not debauched, and that their opinions having full swing, do end in satisfaction of the flesh, it may come with reason into the thought of a wise man, whether all this proceed not partly, if not chiefly, from the restraint of some lawful liberty which ought to be given and is denied them? As by physic we learn in menstruous bodies, where nature's current hath been stopped, that the suffocation and upward forcing of some lower parts affects the head and inward sense with dotage and idle fancies.[7]

I have suggested elsewhere in this Journal[8] that Milton derived his familiarity with medical matters not only from his classical studies and from his own long experience of ill health and doctoring, but from a keen interest in what was currently happening in experimental research. He was a personal friend of Henry Oldenberg, secretary of the Royal Society and editor of its transactions; a professional associate of Theodore Haak and Samuel Hartlib, both very active in the movement; and probably an acquaintance of the greatest of the new men of science, Robert Boyle. The interests of these men embraced "Physick and Anatomy" as well as chemistry, mechanics, etc., and the doctors who formed so conspicuous a part of the early Royal Society, were reciprocally interested in the other fields. Though officially banded against scholastic and political discussion in the meetings, many of the group did have speculative and reforming instincts. We may conclude that Milton was no outsider in such company and that there was mutual exchange of knowledge and opinion between him and them on matters of both religious and secular concern.

A further evidence that Paget and Milton could have had a real community of mind in spite of their divergent backgrounds and professions is the presence on Paget's shelves of several collections of tracts mainly on toleration and freedom of conscience and the press, the theme of *Areopagitica,* Milton's noblest prose work. Some of these belong to the Commonwealth and the Protectorate, others to the Restoration when the controversy burst out anew and Milton broke his long silence as controversialist to make a final contribution to it in his tract *Of True Religion, Toleration* etc., in 1673. It is pleasant to think of such ideas and materials passing between the unreconstructed fighter for civil liberties and his medical friend.

But the surest bonds between them must have been the love of literature and learning for their own sakes, and above all Paget's layman's recognition of Milton's mastery of utterance in prose and verse, as witnessed by his not inconsiderable collection of his friend's works. Besides a copy of *Areopagitica* contained in the tract collection above mentioned, he had in his library the first edition of *Paradise Lost* (two copies), the second edition of *Paradise Lost, Paradise Regained, The Reason of Church Government, An Apology for Smectymnuus, Tetra-*

chordon (two copies), *Epistolae Familiares* (two copies), *Artis Logicae Plenior Institutio,* and *A Treatise of Civil Poems in Ecclesiastical Causes.*

Paget's books were auctioned off by William Cooper, who had introduced that method in England in 1676.[9] He came to share the business with Edward Millington, a famous booksellor and picturesque personality, with whom Milton, himself an inveterate book buyer, lived for a while in Little Britain.[10] Cooper and Millington had neighboring shops and the poet and the doctor must often have been in and out of them together. Had they lived a little longer they might have patronized the joint auctions held by these experts and enjoyed the satirical Latin poem on a notable book sale which they composed together.[11]

REFERENCES

1. Bibliotheca Medica Viri Clarissimi Nathanis Paget, M.D. Cui adjicitur quam plurimi alii Libri Theologici, Philosophici, etc. Quorum omnium Auctio habebitur Londini, ad Insigne Pelicani in Vico vulgo dicto Little-Britain 24 Die Octobris 1681. Per Gulielmum Cooper Bibliopolam. The auction, according to the preface, was to begin at eight in the morning and last about four days. The books were on exhibition in Cooper's shop a week before the sale. They were to go to the highest bidder and to be delivered on payment within a month.
2. See W. Y. Fletcher, *English Book Collectors.*
3. *The Life of Milton,* IV, 151; VI, 454-55, 469, 473-75, 744. See D. N. B. for added data.
4. See H. Rolleston, "Jonathan Goddard" in *Annals of Medical History,* 1940, Ser. 3. 2:1931-32.
5. Edward S. Parsons, "The Earliest Life of Milton," *English Historical Review,* January, 1902. Parsons' original suggestion that the author of the memoir speaks as if he were present at the deathbed is fairly weighty. The biographer's knowledge of Milton's unpublished treatise *Of Christian Doctrine* and his tolerant attitude toward the heresies also speaks for Paget.
6. Sir Thomas Browne's catalogue lists about 2,300 lots. The library of Dr. Francis Bernard, sold in 1698, contained 15,000 lots and 39 bundles of tracts.
7. *The Doctrine and Discipline of Divorce,* 1644, Book I, Chap. XIV.
8. "John Milton Forswears Physic," *Bulletin of the Medical Library Association,* Vol. 32, No. 1, Jan. 1944, pp. 23-34.
9. See H. R. Plomer, *English Printers,* 1668-1725, p. 81; *List of Catalogues of English Book Sales* 1676-1900, London, 1915; John Lawler, *Book Auctions in England* 1676-1700, London, 1898. Lawler gives a brief description of the Paget sale.
10. See David Masson, *The Life of Milton,* VI, 650-51. John Dunton, *Life and Errors,* 1816, Vol. I, p. 236 gives the following account of Millington: "He was originally a bookseller, which he left off, being better cut out for an auctioneer. He had a quick wit, and a wonderful fluency of speech. There was usually as much comedy in his 'Once, twice, thrice,' as can be met with in a modern play. 'Where,' said Millington, 'is your generous flame for learning? Who but a Scot or a blockhead would have money in his pocket and starve his brains?' Though I suppose he had but a round of jests, Dr. Cave once bidding too leisurely for a book, says Millington, 'Is this your Primitive Christianity,' alluding to a book the honest doctor had published under that title. He died in Cambridge and I hear they bestowed an elegy in his memory, and design to raise a monument to his memory." For some reason Masson missed this account of the man whom Richardson describes as leading the blind Milton about the streets of London hand in hand.
11. William Cooper and Edward Millington, *Auctio Davisiana Oxonii Habita,* Londini, 1689. Richard Davis was himself a bookseller. His stock was sold in several lots between 1685 and 1692. A copy of the poem is in the British Museum.

Association News

THE CLEVELAND MEDICAL LIBRARY CELEBRATES GOLDEN JUBILEE

The Cleveland Medical Library Association celebrated its golden jubilee November 26-27, 1944. Founded as an independent organization by the action of a joint committee appointed by the three medical societies in Cleveland—none of which is still in existence in the same corporate form—with an endowment of only $2000, a small collection of books, and temporary quarters in a wire-enclosed alcove of a general library, the Association has grown in the intervening 50 years to a membership of over 1000 and is the possessor of a collection of books and journals numbering more than 63,000 volumes, of a monumental building costing over $650,000, and of endowments totaling $643,000. Its reader registration is about 10,000, and it sends about 800 packages of books and journals to its members each year through its delivery service.

The medical profession, its friends and the general public were invited to a meeting on Sunday, November 26, held at the home of the Association, the Allen Memorial Library Building. After greetings from Winfred G. Leutner, LL.D., president of Western Reserve University, William E. Wickenden, LL.D., president of Case School of Applied Science, and Dr. Abram B. Bruner, president of the Academy of Medicine of Cleveland, an address on "The Forgotten Man in Medical Education" was delivered by Dr. Normand L. Hoerr, professor of anatomy in the School of Medicine of Western Reserve University. The chairman of the board of trustees, Dr. Lawrence A. Pomeroy, announced that the board of trustees had voted to designate the museum of the association as The Howard Dittrick Museum of Historical Medicine in honor of the association's president, Dr. Howard Dittrick, who had developed it over a period of twenty-five years into a collection of unusual interest and merit.

After the formal exercises, the building was opened to inspection by the guests, who included many civic leaders and the heads of cultural institutions in Cleveland. A feature of especial appeal to the visitors was the Cleveland Branch of the Army Medical Library, which displayed its priceless collection of incunabula arranged by Major Thomas E. Keys and the curator, Dr. Max Fisch. The Dittrick museum also attracted many visitors, as did the Nicolaus Pol collection belonging to the Medical Library Association.

A large committe of physicians' wives serving under Dr. Harold Feil acted as hostesses at the tea table and as ushers to guide visitors through the building.

On Monday evening, November 27, the jubilee dinner was held at the Hotel Statler with Dr. Ralph M. Watkins serving as chairman of the dinner committee. Dr. Howard Dittrick acted as toastmaster. Colonel Harold W. Jones, M.C., Director of the Army Medical Library, Washington, D.C., spoke on the subject "So Fairly Bound." The history, present condition and aspirations of the Association were discussed in a series of three talks entitled "Anamnesis," "Prognosis" and "Therapia," given by Drs. William Evans Bruner, Louis J. Karnosh and Robert M. Stecher, respectively. Dr. Jerome Gross, an accomplished concert musician as well as surgeon, delighted the guests with violin selections. He was accompanied by Dr. Rafael Dominguez. The guests of honor were the survivors among the charter members, including Dr. William F. Brokaw, Dr. Thomas A. Burke, Dr. William Evans Bruner, Dr. William Thomas Corlett, Dr. William T. Howard, Dr. John P. Sawyer, and George D. Upson. Among the distinguished guests from other cities were the following members of the executive committee of the Honorary Consultants of the Army Medical Library: Dr. John F. Fulton of Yale University, Dr. Henry R. Viets of the Boston Medical Library and Dr. Wilburt Davison, Dean of the School of Medicine of Duke University.

The general chairman of the committee on arrangements was Dr. Clyde L. Cummer; Dr. Harold N. Cole headed a special committee on raising a jubilee fund for the purchase of additional items for the museum, for the collection of old and rare books, and for additional endowment.

FIRST GENERAL MEETING OF THE HONORARY CONSULTANTS OF THE ARMY MEDICAL LIBRARY

For about a year and a half, the Army Medical Library has been enlisting a group of honorary consultants, who now number more than seventy-five. The immediate occasion for the appointment of these consultants by The Surgeon General was the need for an advisory body to receive the report of the Survey Committee and to counsel The Director and his staff in their efforts to carry out its recommendations.

The first general meeting of the Consultants was held in Washington, October 5-6, 1944. About sixty were in attendance. They received printed copies of the report of the Survey Committee. Its main findings were presented by Lt. Francis R. St. John, Acting Librarian. Mr. Keyes D. Metcalf, chairman of the Committee, took part in the discussion. Colonel Harold W. Jones, Director of the Library, reported on the progress so far achieved in reorganizing the Library along lines recommended by the Committee. Mr. Archibald MacLeish discussed the proposed Holmes Memorial, the hoped-for research center on Capitol Hill, and the relations between the Library of Congress and the Army Medical Library. The architect's plans for the proposed new building of the Army Medical Library, in close proximity to the Library of Congress and the Folger Shakespeare Library, were presented by Mr. Otto R. Eggers and by Lt. St. John. There were reports by Miss Mary Louise Marshall on the new classification being worked out for the Library's holdings by a committee of which she is

chairman; by Major Thomas E. Keys and Dr. Max H. Fisch on the work of the Cleveland Branch in restoring the Library's older books; and by Mr. Wyllis E. Wright, recently appointed consultant in cataloging, on the necessity for a new card catalog and on the measures that are being taken to produce it. Dr. Thomas S. Cullen reviewed the history of efforts to secure a new building for the Library.

At the dinner meeting on October 5, with Dr. O. H. Perry Pepper as toastmaster, Dr. Morris Fishbein spoke on the need for a permanent endowment for the Library, and on the probability that some of the leading drug and chemical companies would be glad to contribute to it; and Dr. Reginald Fitz told the story of Henry I. Bowditch's *The young stethoscopist, or the student's aid to auscultation* (1846).

At the organization meeting on October 6, Dr. John F. Fulton was elected president; Dr. Chauncey D. Leake, vice-president; Colonel Jones, secretary-treasurer; and Drs. Clyde L. Cummer, Wilburt C. Davison, Morris Fishbein and Henry R. Viets members of the executive committee.

The proceedings of this first general meeting of the Honorary Consultants will be published, with some omissions and abridgments, in the April number of the *Bulletin*.

ARMY MEDICAL LIBRARY EXHIBIT

At the meeting of the Association of Military Surgeons at Hotel Pennsylvania in New York City, November 2-4, 1944, the Army Medical Library had an exhibit of its photoduplication and reference services, and of the restoration of its rare book collection at the Cleveland Branch. There was a display of books illustrating the early history of surgery, and another showing the successive steps in the rebinding of old books. Around the walls there was a series of 16″ x 20″ photographs showing other aspects of the Library's work, and a much more extensive series was projected onto the screen of a Spectrola at one end of the room. Members of the staff were in attendance to demonstrate the exhibits and explain the work of their respective departments.

MAJOR THOMAS E. KEYS, Officer in Charge of the Cleveland Branch of the Army Medical Library, addressed Dr. Logan Clendening's class in the History of Medicine at the University of Kansas Medical School on October 16, 1944. His subject was the "Army Medical Library and its Rare Book Collections." Major Keys also spoke to the American Legion Post of the Cleveland Athletic Club at a luncheon on October 13, 1944. His subject was "Military Surgery in Other Wars."

The CLEVELAND BRANCH of the ARMY MEDICAL LIBRARY was host to the Rowfant Club, one of our country's most distinguished bookmen's clubs, on Friday, November 10, 1944. Following a description of some of the library treasures by Major Keys, Dr. Max H. Fisch spoke on "Rare Books in the History of Science."

In celebration of the one hundredth anniversary of Horace Wells' first use of nitrous oxide as an anesthetic agent, the College of Dentistry of Western Reserve University held a program in the auditorium of the Cleveland Medical Library Association on the anniversary date, December 11. The main event of the evening was a performance of a play by the dental students depicting the contribution of Dr. Horace Wells to the development of anesthesia. This was preluded by a talk by Major Keys entitled "A Pictorial History of Anesthesia."

THE UNIVERSITY OF TEXAS MEDICAL BRANCH, GALVESTON

Dr. Chauncey D. Leake, Dean, The School of Medicine, University of Texas, contributes the following news items under date of November, 1944.

The American Society of Anesthetists met in Houston November 2, and at the Medical Branch of the University of Texas, Galveston, November 3. A feature of the Galveston meeting was an exhibit of historical material relating to Horace Wells, D.D.S., who first used nitrous oxide for anesthesia on December 11, 1844.

The Texas Academy of Science met November 9, 10, 11 under the auspices of the University of Texas Medical Branch, Galveston. A special feature of the meeting was a symposium on November 11 on the biology of the cancer cell, under the chairmanship of Doctor W. A. Selle. Participating were Professors R. E. Hungate, Alfred Taylor, T. S. Painter, and R. J. Williams of the University of Texas, Austin; Fritz Schlenk, Ph.D., of Houston; Professor J. A. Cameron of Dallas, and Doctors W. A. Selle and Paul Brindley of Galveston.

Another feature of the Texas Academy meeting was a symposium on health conditions in the coastal area of Texas, under the chairmanship of J. G. Sinclair, Ph.D., Professor of Anatomy at the University of Texas Medical Branch.

The University of Texas Board of Regents appointed T. S. Painter, Ph.D., Professor of Zoology at Austin, Acting-President of the University of Texas on November 1, 1944.

MISS DOROTHEA FOX reports that the School of Medicine Library, University of Southern California, has been enlarged to twice its original size. It is now furnished with two reading rooms, and the problem of stack and shelf space is solved for a few years at least. The library was extremely fortunate in being able to procure the necessary shelving and equipment in time of war.

WALTON B. MCDANIEL, 2d, sends a plea for help. The Library of the College of Physicians of Philadelphia did not receive its copy of *Mind*, no. 209, January 1944. The issue is now quite out of print, and the Library will therefore be deeply grateful to anyone who can supply a copy of this missing number for its files.

The attention of members of the Medical Library Association is called to the following communication received from the American Urological Association:

UROLOGY AWARD

The American Urological Association offers an annual award "not to exceed $500" for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years. All interested should write the Secretary for full particulars.

The selected essay (or essays) will appear on the program of the forthcoming June meeting of the American Urological Association.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 15, 1945.

COLONEL HAROLD W. JONES reports that the Army Medical Library, Washington 25, D.C., has recently received over a thousand copies of the section on *Medicine and Health* of the *Bibliography of Greenland*. This pamphlet of 28 pages, sponsored by the Department of State and the Department of War, was prepared in 1942 by the Federal Works Agency, War Projects Administration for the City of New York, under the guidance of the Bibliography Committee of The Explorers Club.

The Army Medical Library is now distributing copies to all library members of the Medical Library Association. In addition, individual members may obtain free copies on application to Colonel Jones.

MISS IDA J. DRAEGER, Librarian of the Women's Medical College of Pennsylvania, has published a helpful bibliography on "Women as Physicians in the United States, 1850-1900" in the *Bulletin of the History of Medicine* (vol. 16), 1944, 72-81. Publications recording "the early struggle for the education and recognition of women as physicians in the United States" are listed. Copies of the reprint are available on application to Miss Draeger.

DR. JOHN F. FULTON and MISS CHARLOTTE H. PETERS have recently issued a mimeographed *Hand List of Editions of Polydore Vergil's "De Inventoribus Rerum"* (With an Appendix on "Anglica Historia." Historical Library, Yale University School of Medicine, New Haven, Conn. 1944. 15 ff.). This hand list was compiled and arranged from a bibliography in manuscript prepared by the late Professor John Ferguson. Ninety editions and translations, sixteen possible editions, and ten doubtful editions are listed, with indications of holdings in foreign libraries; the compilers request that librarians in this country inform them of American holdings.

A concise account of the life of Polydore Vergil and of the contents of the "De Inventoribus Rerum" was provided by Elizabeth H. Alexander, from Professor Ferguson's notes, in *Isis* 1932, 17: 71-93. Dr. Fulton himself has recently contributed to the *Essays in the history of medicine presented to Professor Arturo Castiglioni* (Johns Hopkins Press, 1944) a paper calling attention especially to Vergil's chapters on the history of medicine. Vergil was

born at Urbinoi in Italy in 1470, but he spent the greater part of his life in England in important public posts. His chief work, the "History of England," was written at the request of Henry VII and holds a place as the first attempt at a critical history of that country. His work on inventions was also the first of its kind; it contains matter which vitally concerns the history of science, and in view of the many editions it went through in the face of all competition, Professor Ferguson can rightfully say that it was never superseded by anything better but came to an end only by the hand of Time. "It ceased to supply the want it created and met for about 200 years, because the want itself had ceased." Its author richly deserves to be included in a history of inventions, and scholars will be grateful to Dr. Fulton and Miss Peters for their attempt to locate copies in this country.

The Sixty-Eighth Annual Report of the BOSTON MEDICAL LIBRARY, for the Year 1943 (June, 1944), reveals that that institution, while hardly hibernating, has suffered inevitable reduction in "circulation and metabolism." As far as purely physical matters are concerned, an obdurate ration board, by its reduction of fuel oil, necessitated conversion to steam installations. But if war conditions have, as everywhere, lessened the number of people served daily, work on cataloguing and on duplicate material has gone on at an even increasing pace. The report lists the most important accessions; librarians will wish especially to record in their copies of Mr. Ballard's catalogue the ten incunabula added since its publication.

Word comes from HENRY FORD HOSPITAL, Detroit, Michigan, that two foreign journals borrowed on inter-library loan from the University of Michigan, and returned during the latter part of September, have failed to reach the Library. The journals are *Archives Internationales de Pharmacodynamie et de Thérapie,* vol. 11 (1903) and *Vierteljahrsschrift für Gerichtliche Medizin,* vol. 13, pt. 2 (1870). Any librarian knowing of the whereabouts of these journals is requested to communicate at once with Mr. M. A. Mix of the Purchasing Department, Henry Ford Hospital.

CHAPIN PAINTINGS—"SEVEN AGES OF A PHYSICIAN"

Back in September a rather attractive brochure containing the colored reproductions of Mr. James Chapin's paintings, "Seven Ages of a Physician," was mailed to all members of the Medical Library Association by Ciba Pharmaceutical Products, Inc. of Summit, New Jersey. At that time the Ciba Company was scheduling exhibits of the original portraits at various medical schools and medical libraries. About thirty of the Association libraries have requested that the company arrange for an exhibit of these original paintings. However, since quite some time is consumed in hanging and shipping these pictures between exhibits, the Ciba Company is now offering to send in its place a set of very handsomely framed reproductions. Each frame has mounted on it a metal plaque giving the title, and one other frame is supplied which carries a printed text describing the seven pictures as a whole. This will be offered to a number of the libraries as an alternate for the originals and the Ciba Company is in a much better position to schedule these showings at

this time. If you have not already been in touch with the Ciba Company, why don't you write and inquire whether it would be possible to schedule these interesting and inspiring pictures. Address all inquiries to the Advertising Department of Ciba Pharmaceutical Products, Inc. of Summit, New Jersey.

CAPT. FRANCIS R. ST. JOHN, acting librarian and assistant to the director of the Army Medical Library, has been elected to the A.L.A. Council for the term 1944-1948.

THOMAS P. FLEMING is now in charge of a new division in the library organization at Columbia University which embraces various departments, libraries, and reading rooms offering services directly to those who use the libraries. His new title is assistant director. Last spring he was elected to membership on the A.L.A. Executive Board.

MR. T. A. PHILLIPS, formerly Sales Manager of the Medical Division of the J. B. Lippincott Company, is now associated with the Blakiston Company where he is Vice President.

MISS MILDRED CROWE, Head of the Division of Medical Science of the Chattanooga Public Library, is spending a year on leave of absence as assistant in the Vanderbilt School of Medicine Library. Miss Crowe is augmenting her experience in the medical library field by working in a university medical library. She is also studying at the Peabody School of Library Science in Nashville. Miss Crowe expects to return to Chattanooga in September.

Reviews and Book Notes

RIDER, FREMONT. *The Scholar and the Future of the Research Library.* 236 pp. New York, Hadham Press, 1944. $4.00.

This inadequately-titled book is one of the most important books of our time. Though it first appears in an edition of 2700 copies—relatively large for a book with so forbiddingly restrictive a title—librarians with a first-edition complex will do well to obtain a copy promptly. No one concerned above the bread-and-butter level with the recording and dissemination of human knowledge can afford to put off reading the book.

Mr. Rider's book is a reviewer's dream, in that its essence can be distilled into a beautifully simple, single idea that at once captures the imagination. In essence, then, Mr. Rider proposes that on the back of each author and subject catalogue card there be micro-printed the whole of the material catalogued on the face of the card.

The book is divided into two parts, the first entitled "The Problem"; and the second, "The Solution." In the first, the author sets forth the "four main factors of the [library] growth problem," which he analyzes as: 1) acquisitional cost; 2) physical preparation for use (binding, plating, collating, backstrip marking, etc.); 3) bibliographical preparation (cataloguing); 4) storage (shelving and maintenance). With these spectral factors all librarians are painfully familiar, and many have been concerned to solve the problems connected with them. Mr. Rider discusses some of the means of alleviation that have been tried, but finds that none more than scratches the surface of any one or has simultaneous effect on all four. This section is interesting reading for any one concerned with library administration, and furnishes a perhaps necessary mental push for the sluggish, but the heart of the book is in the second section, "The Solution."

Mr. Rider visualizes, so far as libraries are concerned, a separate catalogue for the micro-printed material. The cards will be micro-printed, and fully catalogued, in a group of the larger libraries conforming possibly with the structure of specialized research libraries proposed in the Metcalf committee's plan. Moral control of the production and distribution will be vested in a committee established for the purpose.

In the library, the reader would go to the catalogue, find the book he wanted, and make out a requisition slip, giving his name and enough of the data on the face of the card for the subject cards to be located. An attendant would remove the card and insert the requisition slip in its place, as the reader departed with the book in the form of a card or two.

The library would be amply equipped with reading machines. These will

be developed to such a degree of efficiency and economy that a scholar will carry one about with him. Indeed, the promise is held out that libraries will be provided with photography slot-machines; the library's card, and a nickel, say, will be deposited in the machine and out will come a duplicate card which the scholar may own forever.

What sort of material is at present available for such use? Obviously, for the present, only non-copyright material. But Mr. Rider feels that the amount of such material—theses, Government documents, works on which copyright has lapsed—is vast and important enough to warrant an immediate start on the project.

The application of the idea to other kinds of written material than those already suggested seems almost limitless. Mr. Rider mentions, for instance, maps, newspapers, manuscript material which would not economically justify ordinary printed publication, insurance documents, institutional records of all sorts. One, at the moment very poignant, application is mentioned by the author at the close of his book. We are all concerned with the devastation that the war has wrought on the European libraries, and committees are now actively at work on the gigantic task of gathering millions of books for these libraries, arranging for their storage, transportation overseas (years hence), and for their distribution among the libraries. The micro-card plan applied to this herculean subject would demonstrate very dramatically that we had entered upon a new era in our slow approach to the realization of our time's one great, historically sound, concept—One World.

Having given clear evidence of unrestrained enthusiasm for Mr. Rider's magnificent vision (which is already rather more substantial than that), I feel it proper to set forth some personal reservations concerning his proposed method of procedure. As the title of his book indicates, as his cautious statements inside the book indicate, and despite the many other applications of the plan that he himself mentions, Mr. Rider seems to persist in regarding his plan as one essentially for the research library, and so he limits, by statement and implication, the rapid development of the plan. The fact of the matter is, as history will show, the micro-card plan is bound to sweep the world and penetrate into almost every phase of our daily living. It will in time revolutionize the whole system of publication and copyright. *Quae cum ita sint,* it is as commercial as railroads or electricity. Since Mr. Rider says that the idea is probably non-copyrightable, and he seems not inclined to capitalize on it himself, I feel that his apparent desire to circumscribe, by moral force, its immediate application, while understandable in the librarian of Wesleyan University, in fact implies some strange non-recognition of the historical aspects of the situation. An adequate reading machine is the prime requisite at present. In our present economy machines are developed and brought to perfection only by commercial competition. Someone ought to offer Mr. Rider a million dollars, and he ought to accept it and bring out as quickly as possible the best machine he can. When we have all bought that, and the micro-card is a going concern, other houses will attempt, and succeed, in bringing out a better machine and will keep doing so. This plan is the future, and the future can never be denied, though it can be delayed.

Fortunately, the book is printed on suprisingly unwarlike paper, with excellent typography, and beautiful, uncoöperative wide margins. The author's style is dynamic, a little too indulgent, perhaps, to italics and the exclamation point. An index would prove useful. But what of it? Here is a book for the book.

W. B. McDaniel, 2nd

BARACH, ALVAN L. *Principles and Practices of Inhalational Therapy.* 315 pp., 59 illustrations. Philadelphia, J. B. Lippincott Co., 1944. $4.00

Despite the fact that oxygen has been used for years and that its administration has required the use of complex and expensive apparatus there has never been a clear and comprehensive consideration of the subject between the covers of one book. Although the literature on the subject is voluminous, it is widely dispersed among medical and technical journals, making it tedious and difficult for the uninitiated to obtain a clear and unbiased opinion on the subject. Although the present volume is entitled "Inhalational Therapy," it deals extensively and predominantly with the use of oxygen and it goes a long way toward supplying a long needed deficiency.

The author commences quite naturally with the historical and physiologic background of inhalation therapy, giving particular consideration to the therapeutic use of oxygen, carbon dioxide, helium, positive pressures, respirators, equalizing pressure chambers, and vaporized solutions. There follow some 30 chapters each devoted to a single clinical syndrome including the definition, pathologic physiology and inhalational therapy for that condition. There are also chapters on research, methods including description of the apparatus available, care of equipment, respirators and oxygen analyses. The result is a book with chapters varying in length and importance. Inasmuch as the pathologic physiology of many conditions is similar, one has the impression of needless repetition and many of the general considerations concerning gases, temperature, pressure, volume and blood are found only in the chapters on acute altitude sickness and pneumonia. The book would have been greatly improved by one chapter in conclusion summarizing the general aspects of the problem, correcting some of the general fallacies at present in vogue, and emphasizing the more important admonitions, cautions and necessities. These include the stupendous ignorance of the subject by so large a proportion of otherwise well trained and competent physicians, the absolute necessity for constant personal supervision by an experienced attendant, the necessity of administering oxygen in adequate amounts and the desirability of starting oxygen therapy as soon as the need arises rather than waiting until the patient is moribund, and some statement of cost to correct the impression that it is nearly prohibitive.

The dependence of therapeutic procedures upon technical developments was never better illustrated than in the field of oxygen therapy. Adequate apparatus and practical procedures are now available. The importance of oxygen in combat aviation and its popularity in service hospitals will result in the

training of a large number of physicians in the indications and applications of oxygen. The popularity of this form of therapy can be expected to increase rapidly. The present book can be of great value in this development despite the minor criticism mentioned above.

ROBERT M. STECHER, M.D.

BARTON, BETSY. *And Now to Live Again.* 150 pp. New York, D. Appleton-Century Company, c1944. $1.75.

With the desire to share her experiences and save others from making similar mistakes, the author, only daughter of Bruce Barton, has written *And Now to Live Again.* Paralyzed at sixteen from an automobile accident, she has set down ten years later with remarkable candor what those years of recovery meant. Although written with skill and a light touch it is not an amusing book, but one with a definite purpose as may be seen from the titles of the five brief chapters: Disaster and its effects; Rescue; Aids to training and work; Attitude; End of rescue: freedom. She makes a particularly telling plea that those who are crippled should begin the process of reëducation promptly rather than be allowed to suffer both mentally and physically from inactivity. She speaks with particular appreciation of the Institute for the Crippled and Disabled in New York City, which was started by the Red Cross after World War I, and of the increasing need for a series of such Centers so arranged that opportunity will be provided for the necessary mental and spiritual readjustments as well as physical. Of special interest to those who will have to do with the reëducation of soldiers, the book deserves wide reading in order that the handicapped may suffer fewer heartaches from attention of the well-intentioned but unenlightened. In addition to a bibliography it contains summaries of portions of the *Report* of the Baruch Committee on Physical Medicine.

ELIZABETH M. RICHARDS

BRADSTREET, R. B. *The Standardization of Volumetric Solutions.* Second Edition. 151 pp. Brooklyn, N.Y., Chemical Publishing Co., Inc., 1944. $3.75.

Designed primarily as a practical handbook, this small volume presents in concise but complete manner the methods of standardization applicable to the solutions commonly used in volumetric analysis. In nearly all cases, a choice of primary standards is given, equations for the reactions are presented, and many helpful suggestions are made. Selected references, for the most part easily available, and tables of pertinent data add to the value of the book.

For the laboratory worker with a basic knowledge of volumetric analytical methods, this volume will supply in a minimum of time the details necessary for the preparation of practically all standard solutions likely to be required.

J. WAIDE PRICE

DICKSON, FRANK D., and DIVELEY, REX L. *Functional Disorders of the Foot.* Second Edition. 352 pp., 202 illustrations. Philadelphia, J. B. Lippincott Company, 1944. $5.00.

This second edition retains for the most part the general plan and content of the original edition, but certain additions, as well as deletions of unessential material, make it a more practical treatise on the subject.

Much of the space formerly given to foot apparel has been deleted with benefit.

Added to the treatment of metatarsalgia is McElvenny's operation for the removal of a tumor on the fourth plantar nerve; a schematic drawing of the incision and location of the tumor mass is included, together with a photograph of a neurofibroma removed from the fourth plantar nerve. The chapter on the congenital deformity Hallux Varus has been furnished with a photographic figure and with a diagrammatic drawing of the operative correction. To the treatments of affections of the heel has been added the injection of 5 c.c. of Ensipin procaine into the painful area over calcaneal spurs.

Two new chapters appear, the first dealing with functional disorders of the foot in relation to military service, the second with such disorders in relation to industry. These chapters are composed largely of material which had previously been presented elsewhere in the text.

The chapter on constitutional diseases affecting the foot has been expanded and improved, but still leaves much to be desired.

This edition is the most practical single treatment on disorders of the foot. The alterations are not so numerous, however, that anyone already possessing the first edition would be justified in making the expenditure for the second.

C. GLENN BARBER, M.D.

DONALDSON, J. K. *Surgical Disorders of the Chest.* 364 pp., illustrated with 127 engravings. Philadelphia, Lea and Febiger, 1944. $6.50.

In a text book of surgery of the chest, published in 1896, Sir Stephen Paget indicated that in his opinion thoracic surgery had reached its zenith. A perusal of the table of contents of the recent volume *Surgical Disorders of the Chest,* by Major Donaldson, would suggest that Sir Stephen Paget was a much better surgeon than prophet.

This book excellently serves its stated purpose of providing for the medical student and general practitioner a short but comprehensive review of the many conditions successfully treated by thoracic surgeons.

Emphasis is properly divided between the traumatic, inflammatory and neoplastic lesions. The section on pulmonary tuberculosis, though brief, gives a good summary of the accomplishments of surgery in this disease, although necessarily the description of the indications for the various procedures had to be sketchy. Recent advances and the indications for the technique of pulmonary resection are included. All the known thoracic

lesions susceptible to surgical treatment are mentioned, although one might differ slightly regarding the order of their discussion.

This book planned for the non-specialist brings up to date the knowledge in a special field and should thus help decrease the lag between the accomplishments of medicine and their common use in practice.

SAMUEL O. FREEDLANDER, M.D.

DORLAND, W. A. NEWMAN. *The American Illustrated Medical Dictionary,* a complete dictionary of the terms used in medicine, surgery, dentistry, pharmacy, chemistry, nursing, veterinary science, biology, medical biography, etc., with the pronunciation, derivation, and definition. . . Twentieth edition, revised and enlarged with 885 illustrations, including 240 portraits with the collaboration of E. C. L. Miller. 1668 pp. Philadelphia, W. B. Saunders Company, 1944. Plain $7.00. Thumb-Indexed $7.50.

The American Illustrated Medical Dictionary, more familiarly known as *Dorland's Dictionary,* has long been a favorite among librarians as well as physicians. Now in its twentieth edition, it continues to be a quality one volume medical dictionary. One interesting feature of this dictionary is the inclusion of miniature portraits. These are too small for purposes of reproduction but are an interesting addition nevertheless. With modern photographic processes available, it is believed that better likenesses could be achieved. For instance, I doubt very much that Francis Glisson could be recognized by his portrait. The same holds true for Georg Gaffky, Hermann von Helmholtz, Thomas Hodgkin, and many others. On the other hand, some portraits are very clear, for instance that of René Théophile Hyacinthe Laënnec.

It is noted with pleasure that the new term "palindromic rheumatism" defined recently by Hench and Rosenberg is included. However "jeep disease" as recently defined by Buie is not included, possibly because although it was thus called in 1942, it did not become a definite part of the literature until early in 1944.

One of the difficulties encountered among dictionary makers is to decide what obsolete terms should be excluded and what new terms should be added. Even after these decisions have been made, the mechanics of setting and resetting pages are enormous. A well known publisher of an unabridged dictionary avoids many difficulties by patching the electrotypes or resetting the necessary pages so that he can take out terms or insert new ones, whatever the case may be, with each new printing.

THOMAS E. KEYS

FEINBERG, SAMUEL M., with the collaboration of OREN C. DURHAM. *Allergy in Practice.* 798 pages, illustrated. Chicago, The Year Book Publishers Inc., 1944. $8.00.

Ten years ago the author and his collaborator published a book under a similar title which is now supplanted by a volume with more than twice

as many pages and with an extensive bibliography which is largely drawn from the literature of the intervening period.

For its special features—a 99-page chapter on "Pollens and Pollen Allergy" by Oren C. Durham and a 68-page chapter on "Allergy to Fungi" by Dr. Feinberg—this volume can be strongly recommended. These chapters probably constitute as thorough an account of their respective subjects as is to be found in the literature of today.

Taken as a whole the book is concerned with the practical and clinical aspects of allergy rather than with theory. Its material is presented in accordance with the language and concepts of atopy. And, as stated by its author, "While the scope of this volume will embrace to some extent all forms of allergy, such as bacterial, contact, physical and others, chief consideration will be given to the group of allergic manifestations comprising asthma, hay fever, urticaria, atopic dermatitis and similar conditions." In all of these respects it differs markedly from the recent work by Ratner.

Also, the author states that, "In discussing nervous factors in allergy we shall devote more space than the subject deserves, in view of the limited character of this book. Our reason for this departure is that we feel that in most texts on allergy the subject of nervous and psychic influences is insufficiently discussed, resulting in the impression that those who deal with allergic diseases do not take sufficient pains to concern themselves with these factors." Nevertheless, some readers probably would have been better served if the treatment of psychosomatic relations in allergy had been somewhat more complete and sympathetic. The work of T. M. French and his associates (1941) is not referred to, and, with one exception, the latest work listed in the bibliography on this aspect of allergy was written in 1938.

Within its self-prescribed limits, however, the book should be very helpful, especially to the general practitioner. Charts, tables, and descriptions are provided which give the seasonal and geographic distribution of allergenic pollens and fungi. And special attention is given to pollen surveys, mold surveys, the identification of allergenic pollens and fungi, and all matters pertaining to the diagnosis and treatment of hay fever, asthma, and the various forms of allergic dermatosis.

LLOYD ACKERMAN

FRIEDENWALD, HARRY. *The Jews and Medicine. Essays.* 2 vols., illus. Baltimore, The Johns Hopkins Press, 1944. $7.50.

These volumes, which constitute Volumes II and III of the Monograph Series of the Publications of the Institute of the History of Medicine at Johns Hopkins University, contain the collected papers of Dr. Friedenwald, who has long been a supporting member of the Medical Library Association. An account of their contents will be found in the essay by Dr. Arturo Castiglioni, pp. 31-38 above, composed as a tribute to Dr. Friedenwald on his eightieth birthday. It need scarcely be added that they will be an important addition to any medical library with an historical collection.

M. H. F.

JAEGER, EDMUND C., *A Source-Book of Biological Names and Terms*. xxvi, 256 pp. 96 fig. Springfield, Illinois, Charles C Thomas, 1944. $3.50.

The compiler of this source-book rightly believes that in these days of "little Latin and less Greek" it is well to provide students of biology with the literal meanings of the words they use. To this end he has assembled in alphabetical order some 12,000 elements from which biological names and terms are formed. It was a painstaking and laborious task, and teachers as well as students should be grateful to him. Any professor of Latin who has translated descriptions of new species for a colleague in the department of biology will appreciate the need for this volume which far surpasses in its scope the lists in unabridged dictionaries and scientific glossaries.

Most of the entries are necessarily truncated, consisting as they do mainly of the prefixes, stems, roots, and suffixes which are combined in manifold ways to produce the terms of biological nomenclature. Suffixes and prefixes are recognizable at once by the hyphen preceding or following them; other entries are set down as if they were complete words. For the benefit of those who are unacquainted with Greek characters the Greek words from which the modern terms have been derived are reproduced in Roman type, with macrons added as needed; the Greek scholar, however, is startled to see that in the introductory pages, where the editor quotes at length from an earlier authority, words appear in Greek type without their accents. For every entry derivation and meaning are given first, and examples of use, ordinarily in combination with other terms, follow. Compounds are sometimes broken down; when they are not, they can usually be found under the separate parts. In cases where there might be confusion, the reader is conveniently warned that a certain term does not come from another which it closely resembles. Sometimes as many as three different Latin or Greek roots will be found listed under one entry. Often where a mere mention of a Latin or Greek proper name would not adequately explain the modern term, supplementary details are given for clarification. The illustrations are cannily chosen to show how aptly certain animals and plants have been named in the past, and the publisher shows a good sense of timeliness in reproducing on the jacket the popular koala bear of Australia.

The compiler himself realizes that in a work so packed with minute details there will be some errors and omissions. The proof-reading alone must have been an enormous task; congratulations are in order if there are no more serious errors than the following: *any* for *an* (p. vii); *ex-tracted-ed* for *ex-tracted* (p. xi); *dormeintis* for *dormientis* (p. 75); *hawskbill* for *hawksbill* (p. 111); *lyr-eyed for lyre-eyed* (p. 128); *aggitated* for *agitated* (p. 251). A few infelicities of expression and punctuation in the introductory pages will doubtless be corrected in a second edition. A defect in the sewing of the first gathering in the reviewer's copy is perhaps a sole instance.

In the second edition of so valuable a work the general reader might hope for some explanation of the terms Late Latin, Low Latin, New Latin,

and Modern Latin. *Ppr.,* following the principle neither of suspension nor contraction, is confusing as an abbreviation for present participle. The listing of *aedil* directly after *aedes*—Gr. *aēdēs, disagreeable* is perplexing without reference to Latin *aedis, house.* Sophocles deserves mention in connection with Antigone, and Homer in connection with Thersites. An Argonaut is any sailor on the Argo; "a sailor" could be interpreted as meaning one particular sailor. *Charities* on p. 53, if not a typographical error, is misleading for *Charites,* which occurs in its proper form on p. 46. Grammarians might argue that not all superlatives are regularly formed by adding *-issimus* to the stem of the positive; *asperrimus* and *facillimus* are quite as regular in their own way. "New Latin" is strange for *nasica;* a famous Scipio received the appellation as early as the second century B.C. Greek *odōtos* is translated "practicable, feasible" without mention of its derivation from *hodos, road. Punicus* is an adjective meaning Carthaginian, not the name of the city itself. The Latin name for the town in Lower Italy is Tarentum; Taranto is the Italian form. *Vicinor* is a verb meaning "to be near."

But these are minor suggestions for a book which should quickly prove its usefulness. The introductory pages on the principles of word-building enhance the value of the work. It will serve a helpful purpose both in explaining the terms coined by earlier biologists and in enabling biologists of the present age to christen new species appropriately.

DOROTHY M. SCHULLIAN

JONES, PERRIE. *One Thousand Books for Hospital Libraries.* 58 pp. pa. Minneapolis, The University of Minnesota Press, 1944. 50¢.

Miss Jones, pioneer in the movement of library training and service for hospitals, has added another basic tool for librarians, students and volunteers in the field. Her annotated list of books for the patients' library covers a wide subject range and is particularly strong in its fiction, biography and travel book suggestions. An interesting and unique feature of the list is the inclusion of patients' reactions to many of the titles mentioned.

Librarians of army, naval and civilian hospitals with established occupational therapy programs will be disappointed in the meager selecton of art and craft books. One could wish that the author had compressed some of her entries for the most familiar fiction titles into general author notes, thus saving space for a more generous treatment of the other subjects. The popular demand and usefulness of the newer types of adult picture books would have made a section for them welcome, although a few specific titles are listed. The list fills the need, however, for a general guide to the building of the general hospital library book collection and will be extensively used for that purpose.

CLARA E. LUCIOLI, Librarian,
Judd Fund Service to Shut-Ins
Cleveland Public Library

JORDAN, PASCUAL. *Physics of the 20th Century.* Translated by Eleanor Oshry. 185 pp. New York, Philosophical Library, 1944. $4.00.

Medical men like to keep abreast of developments in the basic sciences, and a good medical library tries to help its users do so. This is a serviceable book for the purpose, but it might easily have been made a better one. Neither in the book itself nor on the dust wrapper are we told anything about the author, or about the language, title, place, publisher *or date* of the original. The translation needs revision by someone with a better command of English. The book is cheaply made, and the price is high. Those who can read German should be directed to the original: *Die Physik des 20. Jahrhunderts,* Braunschweig, F. Vieweg & Sohn, 1936. At that time, eight long years ago, the author was 34 years old, and was professor of theoretical physics at the University of Rostock. At first in collaboration with James Franck, later with Max Born, and afterwards independently, he had already made important contributions to the development of quantum mechanics. He deserved a better introduction to English readers.

M. H. F.

McCREADY, BENJAMIN W. *On the Influence of Trades, Professions, and Occupations in the United States, in the Production of Disease.* (Reprinted from *Transactions of the Medical Society of the State of New York,* Vol. III, Albany, 1837, pp. 91-150.) With an introductory essay by Genevieve Miller. 129 pp. Baltimore, The Johns Hopkins Press, 1943. $1.75.

The first comprehensive monogroph on occupational diseases was Ramazzini's *De morbis artificum* (1700). The second was Thackrah's *The effects of the principal arts, trades, and professions, and of civic states and habits of living, on health and longevity* (1831). It is not unlikely that it was the appearance of the latter book in England that prompted the Medical Society of the State of New York in 1835 to propose as the subject for its annual prize essay contest that of occupational diseases in the United States. The prize was awarded to the 23-year-old author of the prophetic but forgotten essay which Miss Miller has here reprinted. As the first American tract on the subject, it deserved to be rescued from oblivion, and Miss Miller is to be thanked for that service as well as for her informing introductory essay.

M. H. F.

MAISEL, ALBERT Q. *The Wounded Get Back.* 230 pp. New York, Harcourt, Brace and Company, 1944. $2.50.

This book was written by a very observant and articulate layman, Albert Q. Maisel, who went out to the South Pacific aboard the hospital ship *Relief.* On his arrival in that area he was transferred to the hospital ship *Solace,* which had been in service for some time, and contrary to his original plan, he went to the great base hospitals in New Zealand instead of to the outlying field stations. He then worked his way north as far as

Espiritu Santo and the Russell Islands. As he progressed from the larger to the smaller units he was able to help co-ordinate the work between the various types of hospitals.

He travelled by air, and his very vivid description of S.C.A.T. (South Pacific Combat Air Transport Command) tells much of this highly organized method of quick evacuation of wounded, a factor of great importance in keeping the incidence of mortality at a minimum.

Mr. Maisel sketches the personal histories of several American doctors who pioneer unceasingly and whose indefatigable heroism is very inspiring. He also gives various case histories concerning different types of disabilities both physical and mental, as well as an outline of the progressive success in dysentery, dengue, filaria, and malaria control.

Mr. Maisel concludes his book with a chapter entitled, "The Psychiatrist's War," an exposition of the essential emotional stability of our men. This may serve as an antidote for the more or less prevalent rumor that our returning soldiers will be predominantly psycho-neurotic. Indeed his statistics for complete recovery in this field are even better than for the physical wounds, which have reached the low figure of 3.2 to 3.5 per cent—about half that of the last war.

This very readable book presents an encouraging account of the success achieved by our Medical Corps during the difficult initial phase, 1942-43, in what is probably, because of lack of tropical experience, the most hazardous of our battle fields. It gives a most comforting forecast that a very high proportion of our wounded will return.

PAUL V. TRAVIS

MOLL, ARISTIDES A. *Aesculapius in Latin America.* 639 pp., illus. Philadelphia, W. B. Saunders Company, 1944. $7.00.

Dr. Moll, Secretary-Editor of the Pan American Sanitary Bureau, has compiled what is, and will probably remain for many years to come, the most indispensable reference work on the history of medicine in Latin America. The main text is divided into two parts, (1) the colonial period (1492-1808) and (2) the period of independence. Within each of these chronological divisions, the material is divided by topics into short chapters. As a result, though many chapters taken singly tell fascinating stories, there is frequent lack of continuity between them, and the book is better adapted for reference use than for consecutive reading. Appendix A is a chronology of disease in Latin America, arranged alphabetically by the names of the diseases. Appendix B is a medical and general chronology of Latin America, arranged by date. These appendices are followed by a select but extensive bibliography, an index of names and an index of subjects. The front endpapers carry a map showing the most significant medical events in each country. The back endpapers carry a map showing the present distribution of medical, dental, and pharmacy schools. There are about 180 illustrations.

Even those who have no special interest in Latin American medicine as such will find that certain episodes familiar to them in other connections,

such as the spread of syphilis at the end of the fifteenth century, are illuminated by the fresh context in which they appear in this volume.

M. H. F.

PORTIS, SIDNEY A., Ed. *Diseases of the Digestive System.* Second edition. 932 pp., 182 illustrations. Philadelphia, Lea and Febiger, 1944. $11.00.

The generous reception accorded this important work has made necessary a second edition shortly after the publication of the first one. The volume has undergone complete revision, so that the present-day needs of students, practitioners, teachers and specialists alike are properly met. Of the fifty contributors, a considerable number are of national and international prominence. Each contributor is especially qualified to discuss the subject for which he has been so carefully chosen. Such authoritative treatment of a wide range of subjects admits of little criticism.

In the revised edition the chapters have been rearranged and the physiology of each organ is now taken up immediately before its clinical discussion. The psychosomatic aspects of gastro-intestinal disorders and disease are prominently stressed. This emphasis probably is largely due to the editor's interest in this important field. The subjects of gastric physiology, peptic ulcer and hepatic disease are treated at considerable length respectively by Necheles, Palmer, and Portis. Discussion of gastro-intestinal complaints of extra-abdominal origin has been properly placed at the end of the volume. This work can be unreservedly recommended.

GEO. B. EUSTERMAN, M.D.

ROBERTSON, H. E. *Hydronephrosis and Pyelitis of Pregnancy.* 332 pp. with 11 halftone illustrations. Philadelphia and London, W. B. Saunders Company, 1944. $4.50.

The text of this volume comprises 257 pages, the 946 references cover 52 pages, and the index, well arranged and complete, includes 21 pages.

Robertson modestly calls this scholarly contribution a review, although his own exact observations, added to those of many others, justify designation of the volume as a monograph. Beginning with Morgagni, there is a chronologic, itemized, well documented and often detailed statement of studies made and conclusions reached by many investigators. The orderly development of events is wisely broken by timely chapters on special features, including bacteriology, influence of nervous system, urography, ureteral reflux, hormones, potassium-calcium ratios and vitamins.

Certain reasonably well established facts emerge. Bilateral dilatation of the ureters in both pelvic and abdominal portions is common in the early months of pregnancy. At about the fifth month, when the uterus is significantly enlarged, practically all pregnant women have dilatation of the abdominal portion of the ureter and the renal pelvis, usually confined to the right side. The dilatation is accompanied by stasis of flow of urine, but if uncomplicated the condition is usually relieved shortly after delivery. Pyelitis

may complicate the dilatation and occurs in "about 1 to 6 or 7 per cent" of all pregnant women. Robertson properly accepts the view that pyelitis is attended by lesser or greater degrees of renal involvement and is really a pyelonephritis, which may result sometimes in permanent injury of the kidney.

The dilatation of the ureters in the early months of pregnancy is probably due to atony of the neuromuscular apparatus, but what underlies this is not clear. Explanations on the basis of the hormonal alterations of pregnancy, vitamin deficiencies, or potassium-calcium ratios are of interest but not convincing. The cause of the later dilatation of the abdominal segment of the right ureter and renal pelvis is a somewhat controversial subject, but Robertson and many others believe it to be due to pressure on the right ureter at the pelvic brim by the natural inclination to the right of the enlarged uterus; the left ureter is protected by the rectosigmoid. This may well be true, but does not explain the occasional incidence of dilatation on the left side or bilaterally.

It is natural to assume that stagnation of urine predisposes to infection, but the mode of infection and the bacteria concerned are in dispute. Robertson favors the view, with which this reviewer agrees, that infection ascends from the bladder, transfer along the ureteral mucosa being sometimes aided by reflux; ascent via the ureteral lymphatics is also possible. Robertson does not accept the idea of lymphatic transfer from the colon, or of blood-borne infection. He is convinced that bacteria do not pass through the kidney unless exudative inflammation has been initiated.

Escherichia coli is the organism most frequently recovered from cases of pyelitis, but in about 10 per cent of the cases pyogenic cocci and other organisms are found. Many believe that E. coli is a secondary invader and that the disease is primarily due to bacteria more clearly pyogenic. This reviewer, however, holds the opinion that E. coli is a pyogen when it grows in certain situations such as peritoneum, bladder, ureters and renal pelvis, foreign to its natural habitat. The problem must be considered as unsettled. Pyelitis can exist without bacteriuria and the latter is not necessarily a certain sign of pyelitis. Even chronic pyelitis is not always accompanied by bacteriuria. There can be little doubt that chronic pyelonephritis may eventuate, but it is said to be infrequent.

Symptoms such as pain in the loins are attributed to distention of ureters and renal pelves, and are probably more severe when infection occurs. Drainage by posture and ureteral catheter is recommended, together with "modern drugs." A succeeding pregnancy "should be avoided until all evidences of infection have disappeared."

The chronologic method of historical review has disadvantages to the reader. Evidence presented in the early part of the survey may not be contradicted until many pages of different material have been read. For example, the work of Peters is considered on pages 182-194, but the opposing views are not considered until page 198 is reached, the intervening space being occupied by apparently unrelated subjects. Orientation could just as well be furnished by a sequential presentation of evidence and counter-evidence. Toxemia of pregnancy and eclampsia are discussed incidentally but only as

they may be related to urinary obstruction and infection. With little additional material this might have been more comprehensively treated. The material on hormones is not on the same scholarly level as the rest of the book. The some comment applies to the review of chemical factors and vitamins. It is not to be expected that in a treatise of this sort therapy would be given in detail, but the presentation is an adequate guide.

Robertson makes no claim to being a purist, but urges the concept pyelitis *of* pregnancy rather than *in* pregnancy and nicely distinguishes pyelectasis and hydronephrosis. Other comments are equally critical and discerning.

The use of older bacteriologic terms is out of line with other aspects of the book that are thoroughly modern. A few items of usage and construction would not be approved by Fowler. The references are almost solely to articles in English, German and French. It may be that the literature of other languages might have been useful. Many of the direct quotations in German and French could have been translated into English without loss of meaning and to the comfort of readers not familiar with foreign languages. Proof reading is good except for a few of the German references. The illustrations are not as well reproduced as might be expected even in these difficult times.

This volume can be highly recommended as interesting, lucid, comprehensive, stimulating, attractively produced and easily readable.

HOWARD T. KARSNER, M.D.

ROSEN, GEORGE. *The History of Miners' Diseases.* A Medical and Social Interpretation. With an introduction by Henry E. Sigerist. 490 pp. illus. New York, Schuman's, 1943. $8.50.

Dr. (now Capt.) Rosen has carried his story from neolithic times to the end of the nineteenth century. He hopes "at some future date, under more propitious circumstances," to bring it down to date in a second volume. The present volume has been acclaimed with enthusiasm in this country and abroad. It richly deserves all the praise it has received, and, what is more to the point, it deserves a wider sale and a wider reading public than it has so far had. It is not every year that brings us a full-length and socially enlightened treatment of a socially important part of the history of medicine.

The book is so admirable, and its scholarship so adequate, that one regrets more than commonly its few imperfections. I shall mention only the most obvious of these, that of relying too often on secondary accounts when the sources are readily accessible, and give a single instance. It is well known that the Philosophical Transactions of the Royal Society for the first 30 or 40 years are among the most important sources for the history of mining and of miners' diseases during that period, on the continent as well as in Great Britain. I find but four references to the Transactions, all at second hand.

On page 106 we read: "The Transactions of the Royal Society of England for 1665 contain a letter sent to the society from Venice in which it is

stated that in some mercury mines of the Forum Julii the miners cannot work longer than six hours at a time." This is taken from Robert James's revision of the anonymous translation of Ramazzini. Ramazzini wrote "in Foro Julii." Neither the anonymous translator nor James took the trouble to go to the source; they rendered the phrase "in the *forum Julii.*" The latest English translator, Wilmer Cave Wright, instead of going to the source, went to a dictionary of place names and wrote "near Fréjus," without reflecting that Venice is a strange place from which to write about the mines in France. Her dictionary did not tell her that Forum Julii was the Latin name for Friuli also. Now if Dr. Rosen had looked up the Transactions (volume 1, number 2, pages 23-24), he would not only have written "in Friuli," but would have found much else to his purpose besides what Ramazzini noted: he would have told us that the letter was written by Walter Pope to John Wilkins; he would have been led on to other papers on mining and miners' diseases in later numbers of the Transactions; and he would have given us a fascinating account of the Royal Society's interest in these matters.

Again, on page 117 we are told that Ramazzini "also states that such subterranean demons are mentioned in the Transactions of the Royal Society of England for 1666." If Dr. Rosen had consulted volume 2, number 19, page 343, he would have been interested to find the Honourable Robert Boyle listing among some "promiscuous inquiries about mines" the following: "6. Whether the Diggers do ever really meet with any subterraneous *Daemons;* and if they do, in what shape and manner they appear; what they portend; and what they do, &c." And again he would have been even more interested in the preceding and following inquiries.

This suggestion is prompted by the feeling that Dr. Rosen's book is important enough and good enough to be judged by the most exacting standards of scholarship; by the expectation that when his second volume is ready there will be a demand for a revised edition of the first; and by the belief that he will welcome the occasion for perfecting what is already an enviable achievement.

MAX H. FISCH

SPAETH, EDMUND B. *The Principles and Practice of Ophthalmic Surgery.* Third Edition. 934 pp., illustrated with 556 engravings, containing 798 figures and 6 colored plates. Philadelphia, Lea and Febiger, 1944. $11.00.

The popular demand for this book has produced a third edition testifying to the fact that the work has now become a well recognized and standard text. Many new illustrations are a valuable addition. The chapter on squint is comprehensive and understandable and the material on ptosis is the best available in any present-day work. Newest material in the book is the article on gonioscopy.

The chapter on retinal detachment contains much obsolete material and probably will be rewritten in the next edition. In the discussion of the post-

operative treatment of cataract the methods advised are archaic. Bandaging of both eyes, flat position and restrictions on turning the patient under 24 hours after operation are all procedures long since discarded by many present-day eye surgeons.

A. B. BRUNER, M.D.

WHITE, PAUL DUDLEY. *Heart Disease*. Third Edition. 1025 pp. New York, The Macmillan Company, 1944. $9.00.

The third edition of this popular textbook on cardiology has recently been presented to the medical profession. The book has been significantly altered to include many of the recent advances made in the field of diseases of the heart. Particularly appropriate and valuable is a new chapter dealing with the range of the normal heart. This comprehensive discussion properly occupies Chapter I. It is obvious that an understanding of the range of normal of an organ is essential before its abnormalities can be properly evaluated.

The author's style is clear and the general format of the book merits no criticism. The illustrations are well chosen and well reproduced. Dr. White is an undisputed authority in his field, and those who have read his publications over the past 30 years and who have heard his lectures have been indelibly impressed by his wise conservatism and also by his readiness to accept new ideas when their worth has been established. This book deservedly still occupies in this country and elsewhere the Number One place of texts dealing with diseases of the heart.

F. A. WILLIUS, M.D.

YATER, WALLACE MASON. *Fundamentals of Internal Medicine*. Second edition. 1286 pp., 275 illustrations. New York, D. Appleton-Century Company, 1944. $10.00.

It appears to be the inevitable fate of a medical textbook, as it is of a medical curriculum, to grow. Dr. Yaters' *Fundamentals* enters its second edition 200 pages heavier than when it left its last printing of the first edition. Among textbooks of medicine it is still, however, graced with brevity. Included in the 1,200 pages are over 200 devoted to diseases of the eye, ear and skin and to a consideration of dietotherapy and of the principles of treatment. The liberal use of illustrations characterizes all of the sections.

The text is unique in its field in approaching disease primarily from the standpoint of etiology and physiology, rather than in the customary manner, by presenting a series of Bertillon photographs of "disease entities." It does not seem to this reviewer a drawback that confusion occasionally results: this points up some of the inadequacy of current medical knowledge. The topics in general are well and authoritatively covered. The liberal use of titles, of concise summaries and of bold face type contributes many of the advantages of an "Outline of Medicine" to a much meatier volume, and makes the volume one which should be a godsend to the medical student embarking upon the broad sea of his clinical studies or looking ahead from his pathology and physiology to the application in the clinic.

In view of the many good points of the text, it is perhaps quibbling to point to the inconsistency in the use of popular and scientific terminology in referring to bacterial families, and to hope that in the next edition the relative positions of the metric and apothecaries' notation will be reviewed, if indeed the obsolete apothecary system is given at all except in the appendix.

ROBERT F. PARKER, M.D.

The Commonwealth Fund of 41 East 57th St., New York 22, N.Y., announces the publication of the following book: *Atlas of the Blood in Children*. This atlas is by the late Dr. Kenneth D. Blackfan and Dr. Louis K. Diamond of Infants' and Children's Hospitals, Boston.

Bibliography

LITERATURE AND MATERIAL ON ANAESTHESIA IN THE LIBRARY OF MEDICAL HISTORY OF THE UNIVERSITY OF KANSAS MEDICAL DEPARTMENT KANSAS CITY, KANSAS

By LOGAN CLENDENING, M.D.
Professor of the History of Medicine

Major Keys has visited our library and spent several days in examining the material on anaesthesia. He has been kind enough to say that it is a very valuable collection of source material for the history of anaesthesia and has asked me to list it here and say something about how the collection was made. I do so in order that other scholars may know where this material is available for study and to assure them that we will help them as freely as we are able if they wish to use any of it.

In 1935 the late Mr. Anthony J. Russo, of the Hoosier Bookshop in Indianapolis, offered for sale a collection of items on the history of anaesthesia. The collection was begun by a Bostonian interested in Boston history soon after the famous operation under ether at the Massachusetts General Hospital. He was not a physician, but his collection was bequeathed to a physician who added a great many autographic and association items. Upon his death his widow disposed of the collection intact to a physician in Indianapolis who had been particularly interested in that part of the history of anaesthesia which concerned Crawford W. Long. This gentleman kept the combined collection intact and added to it, finally disposing of it to Mr. Russo. He, however, made Mr. Russo promise to keep his identity confidential, because he feared that if it became known he would be bothered by cranks, and he had already had his full share of that. I do not know the names of any of the original collectors.

Mr. Russo thought the collection should be transferred as a whole, and through the generosity of my wife it was given to me complete. I have made additions to it continuously since 1935, particularly in the field of the more recent anaesthetics, and of local anaesthesia. Thus I added an autographed photograph of Dr. Carl Koller and his original paper on cocaine, an autographed photograph of Dr. Arthur Dean Bevan and Dr. Isabella Herb Herb, who introduced ethylene, and letters and reprints from Dr. James T. Gwathmey, Dr. E. I. McKesson and others.

The high points of the collection are:

1. Autographs, and in most instances holograph letters, of every person officiating at the operation at the Massachusetts General Hospital on October 16, 1846. Except the patient! I have not the autograph of the patient, and I doubt if one exists.

2. Three copies of *Some Account of the Letheon,* by Edward Warren, all dated 1847, one labelled "Second Edition," one labelled "Third Edition," and one on which there is no notation as to edition, which I feel certain is the first edition.

3. Crawford W. Long. (1) A holograph letter unsigned but the handwriting attested by Dr. Long's daughter, Mrs. Frances Taylor, giving some amusing personal reminiscences. (2) A biographical pamphlet of reminiscences by his friend Joseph Jacobs, privately printed at Atlanta, Georgia, 1919. This must be of extreme rarity. Major Keys had never seen a copy or heard of it.

ABBOT, J. H. The discovery of etherization. In: Atlantic Monthly, Vol. 21. June, 1868. pp. 718-725. Entire orig. issue.

———. Principles recognized by scientific men applied to the ether controversy. In: LITTELL'S LIVING AGE, No. 214. June 17, 1848. Entire orig. issue.

ANSTIE, FRANCIS E., M.D. Stimulants and narcotics, their mutual relations: with special researches on the action of alcohol, ether and chloroform, on the vital organism. London & Cambridge: Macmillan & Co. 1864. 474 pp. 15 pp. notes.

ARCHER, W. HARRY, D.D.S. The history of anaesthesia. Reprint—Proceedings of the Dental Centenary Celebration, March, 1940. Autographed by Archer.

AYER, WASHINGTON. Account of an eye witness of the first public demonstration of ether anaesthesia at the Massachusetts General Hospital, October 16, 1848. From: "The Semi-Centennial of Anaesthesia" Mass. Gen. Hosp., 1897.

BARKER, GEORGE T., D.D.S. Instructions in the preparation, administration, and properties of nitrous oxide, protoxide of nitrogen, or laughing gas. Philadelphia: Rubencame & Stockton, 1866. 8vo. 61 pp. 7 illus. First edition.

BEECHER, HENRY K., M.D. The first anesthesia records (Codman, Cushing). Reprint-Surg. Gyn. & Obs. Vol. 71. Nov. 1940. pp. 689-693.

BEDDOES, THOMAS. Thomas Beddoes: Pioneer in inhalation therapy. By: Albert H. Miller, M.D. Reprint—Anes. & Anal. July-August, 1933.

BEVAN, ARTHUR DEAN. The present status of the anesthesia problem. Reprint—J.A.M.A. Nov. 21, 1931. Vol. 97. 1530-1536.

BIGELOW, HENRY J., M.D. Ether and chloroform: a compendium of their history, surgical use, dangers, and discovery. Boston: David Clapp. 1848. Reprint—Boston Med. & Surg. J. pp. 1-27.

———. Words commemorative of Henry Bigelow, M.D. Spoken on Thursday, January 25, in Eliot Church; and on Sunday, January 28, 1866 in Channing Church, Newton. By Edward J. Young. Published by request. Boston: Nichols & Noyes. 1866.

———. Anaesthetic inhalation. Boston Med. & Surg. J. (New Series) Vol. V. No. 21 (May 26) 1870. pp. 389-408.

———. Alleged death from ether. To the Editor of the British Medical Journal. Reprint. 1873. 10 pp. No. 1403 Bibliotheca Osleriana.

———. A history of the discovery of modern anaesthesia. In: A century of American Medicine. 1776-1876. Am. J. Med. Sc. (New Series). Vol. 71. 1876.

———. Autograph letter signed.

BLUNDELL, WALTER. Painless tooth-extraction without chloroform. With observations on local anaesthesia by congelation in general surgery. Second edition. London: John Churchill, 1856. 71pp. Illus.

BOSTON MEDICAL AND SURGICAL JOURNAL. Vol. 35. 1846. In parts as issued.

BOSTON MEDICAL AND SURGICAL JOURNAL. Vol. 36. 1847. In parts as issued.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. Report of a committee of the Boston Society for Medical Improvement, on the alleged dangers which accompany the inhalation of the vapor of sulphuric ether. Boston: David Clapp. 1861. 36 pp. Orig. wrap.

BOWDITCH, NATHANIEL I. The ether controversy. Vindication of the hospital report of 1848. Boston: John Wilson, 1848. Apparently privately printed. Autographed by Bowditch.

———. Autograph of Dr. Walter Channing on fragment of cover of Ann. Report. Board of Trustees Mass. Gen. Hosp. 1835.

BRAUN, HEINRICH, M.D. Local anaesthesia, its scientific basis and practical use. Trans. & ed. by Percy Shields, M.D., from the 3rd revised German edition. Philadelphia & New York: Lea & Febiger. 1914. 385 pp. 215 illus.

BUCHANAN, GEORGE. Clinical surgery, being the substance of an address delivered in the University of Glasgow, on the occasion of the inauguration of the chair of clinical surgery. Fourth edition. Glasgow. 1888. 14 pp. (Remarks on ether and date of introduction into England and Scotland.)

BURNS, ROBERT, JR., D.D.S. The first injection of novocaine in America. Reprint—Dental Items of Interest. July, 1939. 7 pp.

CHANNING, WALTER, M.D. A treatise on etherization in childbirth. Boston: Wm. D. Ticknor & Co. 1848. 40 pp. 8vo. Orig. cl. With autograph sig. of T. Waterman, Jr.

———. Autograph letter signed by.

———. Engraved matriculation card of Harvard Med. School signed by Channing as Dean, 1844.

COCK, F. WILLIAM, M.D. The first operation under ether in Europe—The story of three days. In: University College Hospital Magazine. Vol. I. No. 4. February, 1911. pp. 127-144. 8vo. 12 illus. Orig. wrap. Inscribed to Harvey Cushing from Cock on front cover.

COOKE, M. C. The seven sisters of sleep. Popular history of the seven prevailing narcotics of the world. London: James Blackwood. (no date). 356 pp. 15 pp. appendix. Orig. boards.

CORDUS, VALERIUS. Valerious Cordus and the discovery of ether. By Chauncey D. Leake. Reprint—Isis, No. 21. (Vol. 7, 1). 1925.

CORNING, J. LEONARD, M.D. Local anaesthesia in general medicine and surgery, being the practical application of the author's recent discoveries. New York: D. Appleton & Co. 1886. 100 pp. 3 p. index. Orig. cl.

DUNSTER, EDWARD S. The history of anaesthesia. In: the Peninsúlar Jour. of Med. August, 1875. pp. 337-356. Orig. journal.

DWINELLE, WILLIAM H. The casket and the ribbon, or the honors of ether. Pamphlet from Am. J. of Dent. Sc. Baltimore: John W. Woods. 1849. 26 pp. Orig. wrap.

ELLIS, ROBERT. On the safe abolition of pain in labour and surgical operations, by anaesthesia with mixed vapours. London: Robert Hardwicke. 1866. 80 pp. Illus. Orig. cl.

EMERSON, EDWARD WALDO, M.D. A history of the gift of painless surgery. Reprint from The Atlantic Monthly, November, 1896. 9 pp. (2 copies).

ESDAILLE, JAMES, M.D. Mesmerism in India, and its practical application in surgery and medicine. Hartford: Silas Andrus & Son. New York: Fowlers & Wells. 1847. 246 pp. 13 pp. appendix. 12 mo. Orig. paper wrap. First American edition.

———. Natural and mesmeric clairvoyance, with the practical application of mesmerism in surgery and medicine. London: Hippolyte Bailliere. 1852. 254 pp. 11 pp. appendix. 6 pp. postscript. Orig. blue stamped cl.

ETHER DAY. The Semi-Centennial of anaesthesia. October 16, 1846-96. Boston: 1897. First edition. 4to Buckram. Plates. Privately printed. Only a few copies.

———. Inspection of new out-patient department and other recent buildings. Mass. Gen. Hosp. Ether Day, 1903. 8vo. Illus. pamph. Small edition.

———. The fruits of medical research with the aid of anaesthesia and asepticism. By Charles W. Eliot. Boston: The Barta Press, 1909. 63rd anniversary address, October 16, 1909.

———. Song words for Ether Day alumni dinner, October 16, 1909. 63rd anniversary. 4 pp. folder.

———. Phylogenetic association in relation to certain medical problems. By George W. Crile. Address 64th anniversary of Ether Day. Barta Press, 1910. 41 pp. pamphlet. Orig. state.

———. The biological basis of specific therapy. By Simon Flexner, M.D. Boston: Barta Press, 1911. 20 pp. pamphlet. Orig. state. Address on 65th anniversary, October 16, 1911.

———. Contributions of the Nineteenth Century to a living pathology. By William J. Mayo. Boston: Barta Press, 1912. 15 pp. pamphlet. Orig. state. Address on 66th anniversary, October 16, 1912.

———. Progress and problems in preventive medicine. By Milton J. Rosenau. Boston: Jamaica Printing Co. 1913. 32pp. pamphlet. Orig. state. Address on 67th anniversary, October 16, 1913.

———. The significance and effect of pain. By John M. T. Finney, M.D. Boston: Griffith-Stillings Press, 1914. 27 pp. pamphlet. Orig. cloth.

Special issue. Address on 68th anniversary, October 16, 1914.

———. The dangers of ether as an anaesthetic. By W. W. Keen, M.D. Boston: Jamaica Printing Co. 1915. 29 pp. Orig. boards. Special issue. Address on 69th anniversary, October 16, 1915.

———. Preparedness for health. By Haven Emerson, M.D. Boston: 1916. 29 pp. pamphlet. Orig. wrap. Address on 70th anniversary, October 16, 1916.

———. The achievements, standards and prospects of the Massachusetts General Hospital. By Richard C. Cabot, M.D. Boston: 1919. 22 pp. pamphlet. Orig. wrap. Address on 73rd anniversary, October 16, 1919.

———. Notice of the 77th Anniversary Ether Day meeting and dinner, October 16, 1923.

———. Program of the 77th Anniversary of Ether Day, October 15-16, 1923.

———. Invitation to the 78th Anniversary of Ether Day, October 16, 1924.

———. Invitation card to the celebration of the 81st anniversary of Ether Day, October 17, 1927.

———. Invitation card to the celebration of the 82nd anniversary of Ether Day, October 12, 1928.

———. Invitation to the celebration of the 87th anniversary of Ether Day, October 16, 1933.

ETHER MONUMENT. City Document. No. 101. City of Boston. Proceedings at the dedication of the Ether Monument. 1868. 14 pp. pamphlet. Privately distributed. In mint state.

EVERETT, EDWARD. An oration pronounced at Cambridge, before the Society of Phi Beta Kappa. August 26, 1824. Boston: Oliver Everett. 1824. Published by request. Inscribed by author to Maj. Gen. Lafayette in dedication.

FLAGG, J. F. B., M.D. Ether and chloroform: their employment in surgery, dentistry, midwifery, therapeutics, etc. Philadelphia: Lindsay & Blakiston. 1851. 189 pp.

FÜLÖP-MILLER, RENÉ. Triumph over pain. Translated by Eden and Cedar Paul. Indianapolis-New York: Bobbs-Merrill Co. 1938. 438 pp.

GWATHMEY, JAMES T., M.D. Some facts not generally understood about oil-ether colonic anesthesia. Reprint from The Laryngoscope. St. Louis, October, 1915.

———. General analgesia by oral administration. Reprint from the Brit. Med. J. March 2, 1918.

———. The open method of nitrous oxid-oxygen anesthesia. Reprint from Am. J. Surg. October, 1920.

———. Synergistic analgesia. Reprint Am. J. Surg. October, 1922.

———. Painless childbirth by synergistic methods. Reprint Am. J. Obs. & Gyn. August, 1924. Vol. VIII. No. 2.

———. Obstetrical analgesia. Reprint Am. J. of Ob. & Gyn. March, 1925. Vol. IX. No. 3.

———. Newer methods of preliminary medication. Reprint address. October 12, 1925.

———. Preliminary medication in general anesthesia, with special reference to the margin of safety and postoperative lesions of the lung. Reprint Arch. Surg. January, 1928. Vol. 16. Part II, pp. 416-423.

———. Synergism of magnesium sulphate and morphine. Reprint J.A.M.A. December 8, 1928. Vol. 91. pp. 1774-1776.

———. On the synergism of magnesium sulphate and morphine. Reprint Am. J. Ob. & Gyn. Vol. XVIII. No. 2. p. 299. August, 1929.

———. Ethylene and carbon dioxid. Reprint Dental Cosmos. November, 1930.

———. Obstetrical analgesia: A further study, based on more than twenty thousand cases. Reprint Anesthesia & Analgesia. November-December, 1931.

———. The barbiturates a safe preliminary medication for surgical operations. Reprint J.A.M.A. November 17, 1934. Vol. 103. pp. 1536-37.

HAYWARD, GEORGE. Remarks on the comparative value of the different anaesthetic agents. Boston: David Clapp, 1850. 11 pp. Orig. wrap.

———. Surgical reports and miscellaneous papers on medical subjects. Boston: Phillips, Sampson & Co. 1855. 448 pp. Orig. Cl. Autographed presentation copy.

———. (An association item): Inscription to "Dr. Hayward with the regards of J. T. Austin," on cover of Report of Visiting Committee of Harvard University for January, 1849. 39 pp. Orig. wrap.

HERB, ISABELLA, M.D. Explosions of anesthetic gases. A method for the control of electrostatic conditions. Reprint J.A.M.A. December 5, 1925. Vol. 85. pp. 1788-90.

———. Further clinical experiences with ethylene-oxygen anesthesia. Reprint Anesthesia and Analgesia. December, 1927.

———. The present status of ethylene. Reprint J.A.M.A. Nov. 25, 1933. Vol. 101. pp. 1716-19.

———. Photograph of.

HODGES, RICHARD MANNING. A narrative of events connected with the introduction of sulphuric ether into surgical use. Boston: Little, Brown & Co. 1891. 159 pp. Orig. boards.

JACKSON, CHARLES T. Gay, Martin—A statement of the claims of Charles T. Jackson, M.D., to the discovery of the applicability of sulphuric ether to the prevention of pain in surgical operations. Boston: David Clapp. 1847. 29 pp. plus 18 pp. appendix. Autographed presentation copy.

———. Lord, J. L. & H. C.—A defense of Dr. Charles T. Jackson's claims to the discovery of etherization . . . in the report of the Trustees of the Mass. Gen. Hosp., and in Littell's Living Age. No. 201. Boston: 1848. 37 pp.

———. Lord, J. L. & H. C.—The ether controversy. In: Littell's Living Age. No. 213. June 10, 1848. pp. 491-522. Complete orig. number in orig. covers.

———. A defence of Dr. Charles T. Jackson's claims. . . . Boston: Littell's Living Age. 1848. Autograph presentation copy inscribed by Jackson to Rev. Charles Lovell.

———. Lord, J. L. & H. C.—Memorial address to the Trustees of the Massachusetts General Hospital, in behalf of Charles T. Jackson, M.D., in relation to the discovery of etherization. Boston: Thurston, Torry & Co. 1849. 27 pp. First issue, with erratum note on last page.

———. A manual of etherization: containing directions for the employment of ether, chloroform, and other anaesthetic agents, by inhalation, in surgical operations, . . . also, a brief history of the discovery of anaesthesia. Boston: J. B. Mansfield. 1861. 134 pp. Orig. cl.

———. Barber, William: Dr. Jackson's discovery of ether. In: National Magazine. Vol. V. No. 1. October, 1896. pp. 46-58. Extracted article, with original covers attached.

KOLLER, CARL. On the use of cocaine for producing anaesthesia on the eye. The Lancet. December 6, 1884. pp. 990-92.

———. Historical notes on the beginning of local anesthesia. Reprint—J.A.M.A. May 26, 1928. Vol. 90. No. 21. pp. 1742-43 (also pages from orig. issue of J.A.M.A.).

———. Autographed photograph of.

LEAKE, CHAUNCEY D. Valerius Cordus and the discovery of ether. Reprint—Isis. No. 21 (Vol. VII, 1). Brussels, Soc. anon. M. 1925.

———. The historical development of surgical anaethesia. Reprint—The Scientific Monthly, March, 1925. Vol. XX. pp. 304-28.

——— (with Ralph M. Waters). The anesthetic properties of carbon dioxid. Reprint—Anesthesia and Analgesia. January-February 1929. Autographed to Dr. Clendening.

———. A preliminary note of the anesthetic properties of certain unsaturated ethers. In: Anesthesia and Analgesia. Vol. X. No. 1. January-February, 1931. Complete orig. copy. Autographed to Dr. Clendening.

——— (with P. K. Knoefel & A. E. Guedel). The anesthetic action of divinyl oxide in animals. Reprint—J. Pharm. & Exper. Thera. Vol. XLVII. No. 1. January, 1933. Autographed to Dr. Clendening.

———. Preanesthetic drugs. Reprint—Cal. & West. Med. February, 1937. Vol. 46. No. 2. Autographed to Dr. Clendening.

LONG, CRAWFORD W. (Association item). Copy of History of the life and voyages of Christopher Columbus. By Washington Irving. Vol. I. Philadelphia: Lea & Blanchard. 1840. With Long's signature and Library Stamp on title page.

———. Young, Hugh H.—Long, the discoverer of anaesthesia. A presentation of his original documents. Reprint—Johns Hopkins Hospital Bulletin, Nos. 77-78. August-September, 1897. 27 pp.

———. Program of the 61st Annual Session of the Medical Association of Georgia. Athens, Georgia, April 20th, 21st, 22nd, 1910. Including program of the unveiling of the monument to Long at Jefferson, Ga. on April 21st, 1910. Orig. state.

———. Chiles, Rosa Pendleton—Dr. Crawford W. Long, discoverer of

anaesthesia. In: Munsey's Magazine, August, 1911. pp. 623-30. Extracted article with orig. covers attached.

———. Jacobs, Joseph—Dr. Crawford W. Long. The distinguished physician-pharmacist. Some personal recollections. . . . Atlanta, Ga. 1919. Privately printed. 47 pp. pamphlet. Illus.

———. U. S. Senate Document No. 160. . . . Proceedings in Statuary Hall . . . upon the unveiling and presentation of the statue of Long. . . . March 30, 1926. Orig. pamphlet.

———. Taylor, Frances Long—Crawford W. Long and the discovery of ether anesthesia. New York: Paul B. Hoeber. 1928. 237 pp. Illus. Orig. state.

———. Copy of the Jackson Herald, Jefferson, Ga., for February 17, 1938, announcing the naming of the highway from Gainesville to Athens the Crawford W. Long Memorial Highway.

———. Copy of the Jackson Herald, Jefferson, Ga. February 24, 1938, giving account of Crawford Long Day.

———. Raper, Howard R.—Unearned honor on a postage stamp. In: Oral Hygiene, February, 1940.

———. Raper, Howard R.—Publicity triumphs over truth. Reprint—Oral Hygiene, June, 1940.

———. Raper, Howard R.—A review of the Crawford W. Long Centennial Anniversary Celebrations. Reprint—Bull. of the Hist. of Med. Vol. XIII. No. 3. March, 1943.

———. Holograph letter of. Unsigned, but handwriting attested to by his daughter, Frances Long Taylor, in a letter from her.

LORD, JOHN. An essay on the rationale of the doings of chloroform. Portland: 1852. 23 pp. pamphlet. In orig. state.

MASS. GEN. HOSP. Some account of the medical school in Boston, and of the Massachusetts General Hospital. Boston: Phelps & Farnham. 1824. 16 pp. 8vo. Uncut.

———. Woodcut of, circa 1830.

———. Engraving of by Goodacre-Sears.

———. Woodcut of, before 1845.

———. Steel engraving of, circa 1846-47.

———. Report of Trustees . . . Jan. 26, 1848. Orig. state.

———. Report of Board of Trustees . . . January 24, 1849. Orig. wrap.

———. The surgical records of . . . before 1846. By H. H. A. Beach. Reprint—Bost. Med. & Surg. J. January 7, 1897. Autographed.

———. A history of the . . . By Nathaniel I. Bowditch. Not published. Boston: John Wilson & Son. 1851. 442 pp. & 1 p. errata. Autograph presentation copy.

———. A history of the . . . (To August 5, 1851) Privately printed in 1851. Second edition with a continuation to 1872. Prepared by request. . . . Boston: 1872. 734 pp. Orig. state.

———. Notice of the first meeting of the Alumni House pupils. March 24, 1906.

———. Memorial and historical volume, together with the proceedings of

the Centennial of the opening of the hospital. Privately printed. 303 pp. Illus. Discovery of ether on p. 132. Orig. state.

———. Picture of inscription on wall of old operating amphitheatre.

———. Picture of Morton's original inhaler and first sponge from which ether was inhaled.

———. Picture of an early operation upon a woman under ether at the hospital. No date given.

MATAS, RUDOLPH. Intralaryngeal insufflation . . . Pamphlet. New Orleans, November, 1899.

———. Local and regional anesthesia with cocaine and other analgesic drugs—the latest methods. Report . . . Louisiana State Med. Soc. . . . New Orleans, April, 1900.

———. Massive infiltration anaesthesia with weak analgesic solutions (modified Schleich method). Reprint—Am. Med. December 28, 1901.

———. Artificial respiration by direct intralaryngeal intubation with a modified O'Dwyer tube and a new graduated airpump, . . . Reprint—Am. Med. January 18, 1902.

———. Local and regional anesthesia: a retrospect and prospect. Reprint—Am. J. Surg. (New Series) Vol. XXV. No. 1. July, 1934, and Vol. XXV. no. 2. August, 1934.

MCBRIDE, T. F. The school of dentistry anaesthesia collection. Address—Sch. of Dent. Alum. Pittsburgh, June 10, 1941.

MCKESSON, E. I. The scope and utility of pressure in nitrous oxid-oxygen anesthesia. Reprint—Am. J. of Surg. July, 1922.

———. Newer concepts and clinical possibilities of nitrous oxid-oxygen anesthesia. Reprint—Anesthesia & Analgesia. Oct. 1923.

———. Pure gas-oxygen anesthesia for ear, nose and throat surgery. Reprint—A.M.A. 75th Ann. Meeting. June, 1924.

———. A new anesthetic, its comparative value. Toledo Technical Appliance Co. February 1, 1924.

———. Nitrous oxid-oxygen in exodontia compared with other anesthetics. Reprint—Philadelphia, October, 1925.

———. How can we eliminate static from operating rooms to avoid accidents with anesthetics. Reprint—Am. Hosp. Assn. Louisville, Ky. October, 1925.

———. Some physical factors in the administration of gaseous anesthetics. Reprint—Anesthesia & Analgesia. December, 1926.

———. The essentials of nitrous oxid-oxygen anesthesia with a review of its use in America. Reprint—J. Am. Dent. Assn. April, 1926.

———. The application of gaseous anaesthetics in some unusual types of operations and in patients with unusual complications. Reprint—Can. Med. Assn. J. 1927. XVII, 1314-17.

———. Some details in the administration of gaseous anesthetics for abdominal surgery. Reprint. 1928.

———. The influence of certain diseases on technic and other considerations of general anesthesia in exodontia. Reprint—J.A.D.A. January, 1929.

———. A comparison of sodium amytal and pernocton as preanesthetic hypnotics. Reprint—Brit. Med. J. November 29, 1930.

———. Anesthesia in relation to goiter. Reprint—Am. J. Surg. Vol. 7. No. 2. By the Toledo Technical Appliance Co.

———. The technique of recording the effects of gas-oxygen mixtures, pressures, rebreathing and carbon-dioxid, with a summary of the effects. Reprint—Anesthesia & Analgesia. January-February, 1933.

———. Nitrous oxid-oxygen anesthesia. Reprint—J. Ind. St. Med. Assn. Vol. XXIV. April 15, 1931.

———. Nitrous oxid-oxygen anesthesia in brain surgery. Reprint—Anesthesia & Analgesia. May-June, 1934.

———. General anesthesia in dental and oral surgery: with special reference to causes and management or prevention of respiratory obstructions. Reprint—Anesthesia & Analgesia. November-December, 1934.

———. Some effects of operations upon the circulation, their significance and treatment. Pamphlet.

MESMERISM: its history, phenomena, and practice; with reports of cases developed in Scotland. Edinburgh: Fraser & Co. 1843. 240 pp.

MILLER, ALBERT H. Two notable controversies over the invention of the electric telegraph and the discovery of surgical anesthesia. Reprint—Ann. Med. Hist. (New Series) Vol. 6. No. 2. pp. 110-23.

MORTON, W. T. G. Letters of Patent No. 4,848, dated November 12, 1846. Morton's patent of Letheon. One large sheet with signatures (in print) of Morton and his witness, R. H. Eddy.

———. Photostat of Daniel Webster and Charles M. Keller's opinions on Morton's claims to a patent. Dated 1847.

———. Littell's Living Age. No. 213. A most important item dealing with Dr. Jackson's exposition of Morton's claims. Orig. issue intact.

———. On the physiological effects of sulphuric ether, and its superiority to chloroform. Boston: 1850. Orig. wrap.

———. Testimonial of the Members of The Medical Profession of Philadelphia, New York, and Boston, in behalf of Wm. T. G. Morton, M.D. Philadelphia: Collins. 1860. 32 pp. Photostat of signatures to the Testimonial. Autograph presentation copy.

———. Proceedings on behalf of the Morton Testimonial, Philadelphia, February 15, 1861. Boston: J. H. Eastburn. 1861.

———. Proceedings on behalf of the Morton Testimonial. Boston: G. C. Rand & Avery. 1861.

———. Historical memoranda relating to the discovery of etherization, and to the connection with it of the late Dr. William T. G. Morton. . . . Boston: Rand, Avery & Frye. 1871. Orig. wrap.

———. The discovery of anaesthesia. Dr. W. T. G. Morton and his heroic battle for a new idea; how painless surgery began fifty years ago. By Elizabeth Whitman Morton (Mrs. W. T. G. Morton). McClure's Magazine. Vol. VII. No. 4. September, 1896. Extracted article, with orig. covers attached.

———. The first use of ether as an anaesthetic; Battle of the Wilderness

in the Civil War. J.A.M.A. Vol. XLII. No. 17. April 23, 1904. (Written by Morton but unpublished until 1904).

———. Morton, Wm. James—Memoranda relating to the discovery of surgical anesthesia, and Dr. William T. G. Morton's relation to this event. Reprint—Post-Graduate, April, 1905. 21 pp. (Two copies).

———. William T. G. Morton Memorial monument. Charlton, Mass., 1919. Centenary of Morton's birth. Pamphlet and two copies of program with photograph of monument.

———. Forty immortals of Worcester and its county. Lives and portraits, including W. T. G. Morton. Privately printed for the Worcester Bank & Trust Co., 1920.

———. Morton, Wm. James—The discovery of practical surgical anaesthesia. March 1, 1920. 3 pp. address to the Electors of the Hall of Fame, stating Morton's claims.

———. Rice, Nathan P.—Trials of a public benefactor, as illustrated in the discovery of etherization. New York: Pudney & Russell. 1859. 460 pp. With portrait of Morton.

———. Dana, R. H.—A history of the discovery of ether . . . Dr. Morton's memoir to the French Academy. In: Littell's Living Age. No. 201. March 18, 1848. Entire number in good state.

———. (Association Item). Gould, Augustus A.—Principles of Zoology: . . . Boston: Gould, Kendall & Lincoln. 1848. 216 pp. (Gould suggested some improvements in Morton's apparatus before public demonstration).

———. Roth, Geo. B.—The original Morton inhaler for ether. Reprint—Ann. Med. Hist. Vol. 4. No. 4. (New Series) pp. 390-97. Paul B. Hoeber. 1932.

———. (Association Item). Typewritten letter to Dr. Clendening from Ellen Morton (Mrs. William James Morton), daughter-in-law of W. T. G. Morton.

———. Photostat (2 pieces) of Daniel Webster's letter to W. T. G. Morton stating his belief that Morton was the discoverer of anaesthesia.

———. Clipping from Chicago Tribune, June 1, 1924 showing picture of Morton's bust recently unveiled in the Hall of Fame.

———. Emory A. Bryant—Freak Patents. J.A.M.A. July 24, 1926. Extracted page. Refers to Morton's patent claims.

———. Picture of ether monument with busts of Morton and Long.

———. Copper plate portrait of.

———. Photograph of Morton's medals and case of money sent him by men of Boston. Orig. print from negative.

———. Steel engraving of, by G. R. Hall.

———. Photograph of the painting in the Boston Medical Library, a fanciful representation of the first public operation under ether.

———. (Association Item)—Autograph of S. D. Townsend, who was a witness to the first public operation under ether.

———. U.S. documents relating to Morton's claims. Listed under U.S.

Nevius, Laird W. The discovery of modern anaesthesia. By whom was

it made? A brief statement of facts. Not published. 111 pp. 8 vo. Illus. Orig. cloth.

OSLER, SIR WILLIAM. The first printed document relating to modern surgical anaesthesia. Reprint—Roy Soc. Med. Vol. XI. 1918. pp. 65-69.

PAGET, SIR JAMES. Escape from pain: the history of a discovery. In: The Nineteenth Century Magazine. No. 34. Dec. 1879. pp. 1119-32. Extracted pages with orig. covers attached.

PIPER, R. U. Operative surgery illustrated: . . . Boston: Ticknor, Reed & Fields. 1852. 384 pp. Illus. Orig. binding. Uncut.

PITTSBURGH DENTAL SCHOOL. Account of the anaesthesia collection of the school.

PROTZ, GEORG. Über die Wirkung einiger Anasthetika-chloride und deren Mischungen mit Natriumbikarbonat auf die Froschhaut. (Ethyl chloride anaesthesia). In: Arch. für Exp. Path. und Phar. Leipzig: Vogel. 1920. pp. 238-249. Bound in green cloth with title in English.

ROBINSON, J. Treatise on the inhalation of the vapor . . . In: Littell's Living Age. No. 161. June 21, 1847. Entire orig. issue.

SANSOM, ARTHUR ERNEST. Chloroform: its action and administration. London: Churchill & Sons. 1865. 192 pp. Orig. cloth.

SCHLEICH, C. L. Notes on local anesthesia by infiltration. John Wyeth & Bros. Philadelphia.

SIMPSON, JAMES Y. Notes on the inhalation of sulphuric ether in the practice of midwifery. In: Littell's Living Age. No. 161. June 21, 1847. Intact orig. issue.

———. Remarks on the superinduction of anaesthesia in natural and morbid parturition: . . . Boston: Little & Co. 1848. 48 pp. Orig. wrap.

———. Acupressure. A new method of arresting surgical haemorrhage and of accelerating the healing of wounds. Edinburgh: Adam & Charles Black. 1864. 571 pp. Illus. Autograph presentation copy.

———. Sir James Simpson's introduction of chloroform. By his daughter (Eve Blantyre Simpson). Extracted from the Century Magazine. 1894. (pp. 412-20). Illus.

SIMS, J. MARION. History of the discovery of anaesthesia. Reprint: Virginia Med. Monthly. May, 1877. 14 pp. Orig. wrap.

SMILIE, E. R. An address delivered before the class of the Castleton Medical College, on the original application of anaesthetic agents. Boston: Stacy, Richardson & Co. 1848.

SMITH, MAYO G. A popular treatise on the teeth: . . . Also a full and accurate account of the history of ether or Lethean, . . . Second edition. Boston: Jewett & Co. 1848. 316 pp. Illus.

SNOW, JOHN. John Snow, first anesthetist. By Ralph M. Waters. Extracted leaves from Bios. Vol. 7. No. 1. March, 1936. With a letter from Dr. Waters to Dr. Clendening bound in with pages.

SQUIBBS, EDWARD R. Anaesthetics. New York: 1871.

U.S. 30TH CONGRESS, 2ND SESSION. Report No. 114, H. of R. February 23, 1849. Wm. T. G. Morton, M.D.—Sulphuric ether. (Asking compensation for Morton for his discovery of ether anaesthesia).

———. Report No. 114, H. of R. Minority Report. W. T. G. Morton. February 28, 1849. 99 pp. Rare.

U.S. 32ND CONGRESS, 1ST SESSION. Report to H. of R. vindicating the rights of Charles T. Jackson . . . and disproving . . . W. T. G. Morton. Presented August 28, 1852 by Hon. Edward Stanley and Hon. Alexander Evans.

———. H. of R. William T. G. Morton, M.D.—Sulphuric Ether. Dr. Wm. H. Bissell, Chairman Select Comm. 120 pp. plus 8 pp. debate. 1852.

U.S. 32ND CONGRESS, 2ND SESSION. January 21, 1853. Statements supported by evidence, of Wm. T. G. Morton, M.D. on his claim . . . Presented by Mr. Davis . . . 582 pp. plus 135 pp. appendix.

———. February 19, 1853. Senate Rep. Comm. No. 421. Report of Select Committee . . . Report of Mr. Walker. 39 pp. plus one not numbered.

U.S. 37TH CONGRESS, 3RD SESSION. February 14, 1865. Report of Comm. on Military Affairs No. 89. To whom W. T. G. Morton asked compensation for his discovery of ether.

WARING, EDWARD J. Bibliotheca Therapeutica. The extracted bibliographies from Vol. I., complete, dealing with ether . . . pp. 107-24; 329-36; 423-42.

WARREN, EDWARD. Some account of the Letheon; or, Who is the discoverer? Boston: Dutton & Wentworth. 1847. 38 pp.

———. Some account of the Letheon; or, Who is the discoverer? Boston: Dutton & Wentworth. 1847. 49 pp. Orig. yellow paper wrap.

———. Some account of the Letheon; or, Who was the discoverer? Third edition revised and enlarged. Boston: Dutton & Wentworth. 1847. 88 pp.

———. Circular. Fifth Edition . . . Voice from Europe. Morton's Letheon. (Photostat copy of volume in the Yale Library of Medical History.)

———. Extracted article from New Eng. J. of Med. Vol. 224. No. 25. Describing the Warrens and the Letheon and attempting to solve the authorship of the Letheon.

———. Dr. Clendening's correspondence concerning the various editions of the Letheon, including: letters from C. L. Williams, Librarian of the Treadwell Library, Mass. Gen. Hosp., May 6, and 10, 1939. From Archibald Malloch, Librarian of the N.Y. Acad. of Med. May 17, 1939. From Dr. John F. Fulton, Yale University, April 27, 1939.

WARREN, JOHN COLLINS (Association Item). The New England J. of Med. & Surg. Vol. I. Boston: 1812. Personal copy from Warren's library, with his booklate and portrait laid in.

———. Signed letter from Warren to Gen. Henry A. S. Dearborn. 1824.

———. Report of the Trustees of the Mass. Gen. Hosp. at their Annual Meeting, January 26, 1848. Containing official report of the ether operation.

———. Etherization: with surgical remarks. Boston: Ticknor & Co. 1848. 100 pp. Autographed by Warren to Dr. Martin. Orig. cloth.

———. Effects of chloroform and of strong chloric ether, as narcotic agents. Boston: Ticknor & Co. 1849. 66 pp. Folding plate at p. 22. Orig.

stamped cloth. Autographed to Warren Medical Book Club by J. Mason Warren, April 2, 1867.

———. Photograph of steel engraving by H. W. Smith from a Daguerotype by Whipple. Autographed to Dr. Putnam, March 30, 1860.

———. Address by. In: N.Y. Med. Gaz. & J. of H. Vol. IV. No. 1, January, 1853. pp. 24-25.

———. The influence of anaesthesia on the surgery of the Nineteenth Century. Reprint—Trans. Am. Surg. Assn. 1897. Orig. issue in orig. wrap. Illus.

———. (Association Item). Picture of front steps of Bulfinch facade of Dome building at Mass. Gen. Hosp. Showing ivy planted there by Warren.

———. Copper plate portrait of.

WARREN, JONATHAN MASON. Arnold, Howard Payson,—Memoir of Jonathan Mason Warren, M.D. University Press: Wilson & Son. Cambridge. 1886. (Jonathan Mason Warren was the son of John Collins Warren).

———. India paper proof of portrait of.

WARREN, JOSEPH. Photograph of steel engraving of. (An uncle of John Collins Warren and a general in the Revolutionary War.)

WEBSTER, DANIEL. Photostat of his opinions on W. T. G. Morton's claims to a patent on his discovery. 1847.

WELCH, WILLIAM H. Photograph of from his portrait in Sargeant's painting "Four Doctors" at Johns Hopkins University.

WELLS, CHARLES J. Horace Wells. In: Anes. & Anal. July-August, 1935. pp. 176-89, and September-October, 1935. pp. 216-24. Extracted pages bound.

WELLS, HORACE. To the Members of the Honorable Senate and House of Representatives of the U.S. of A. in Congress assembled. Hartford, March, 1852. 14 names signed to a "suggestion" that Wells be awarded recognition as the discoverer of anaesthesia, and that his widow be given the $100,000.00 recommended for Morton by the Committee of Congress.

———. Discovery by the late Dr. Horace Wells of the applicability of nitrous oxyd gas, sulphuric ether and other vapors, in surgical operations, nearly two years before the patented discovery of Drs. Charles T. Jackson and W. T. G. Morton. Hartford: Elihu Geer . . . 1852. 40 pp.

———. Address by Truman Smith. Deals with his defence of Wells. 3 pp. 4to. folded sheet.

———. Smith, Truman—An examination of the question of anaesthesia, arising on the memorial of Charles Thomas Wells, presented to the U.S. Senate, 32nd Congress, 2nd session, and referred to a Select Committee, . . . New York: John A. Gray. 1858. 135 pp. Two copies.

———. Dr. Wells, the discoverer of anaesthesia. Hartford: Lockwood & Brainard, 1870. 16 pp. Rare.

———. Archer, W. Harry—Chronological history of Horace Wells dis-

coverer of anaesthesia. Abstracted from J. Res. Vol. 18. No. 3. June, 1939.

———. Soifer, Max E.—Dr. Horace Wells, the discoverer of anesthesia. Reprint—Dental Items of Interest. December 1939.

———. Archer, W. Harry—Letters of Dr. and Mrs. Horace Wells discovered. Reprint—Dental Rays. Vol. 15. No. 2. January, 1940.

———. Soifer, Max E.—Horace Wells "rediscovered." Reprint—Dental Items of Interest. Vol. 63. No. 11. November, 1941.

———. Newspaper picture of Well's statue in Bushnell Park, Hartford, Conn.

———. Steel plate portrait of.

Our Contributors

GEORGE L. BANAY is a graduate of the University of Budapest. He came to this country after some years of teaching abroad. He has worked for the National Committee for Mental Hygiene in New York and since 1932 has been research librarian at the Worcester State Hospital, where three foundations maintain an elaborate setup for the investigation of dementia praecox. Mr. Banay is the author of many philological articles.

DR. ARTURO CASTIGLIONI, formerly Professor of the History of Medicine at the University of Padua and Head of the Medical Staff of the Lloyd Triestino Lines, is now Research Associate in the Historical Library of the Yale University School of Medicine. He is best known for his authoritative *Storia della Medicina* (Milano, A. Mondadori, 1927). For additional information see this Bulletin 31: 285 (July) 1943.

DR. THOMAS S. CULLEN is now Emeritus Professor of Gynecology in the Johns Hopkins University and Visiting Gynecologist to the Johns Hopkins Hospital. He came to Baltimore in 1891 from Toronto, Canada, and gradually climbed the rungs of the ladder, succeeding his Chief, Dr. Howard A. Kelly, in 1919. He has published five books, including *Cancer of the Uterus* (Appleton and Co., 1900) and *Diseases of the Umbilicus* (W. B. Saunders Co., 1916), and three volumes of short articles; nearly all these publications were illustrated by Max Brödel and his associates. Dr. Cullen is Supporting Member of the Medical Library Association, Honorary Consultant of the Army Medical Library, and President of the Board of Trustees of the Enoch Pratt Free Library of Baltimore.

DR. BRUNO GEBHART came to this country in 1937 from Germany, where he had been since 1931 Curator of the German Hygiene Museum, Dresden. In that capacity he directed several international hygiene exhibitions in Austria and Germany. At the New York World's Fair he served as consultant for the medical and public health exhibits. Since 1940 he has been Director of the Cleveland Health Museum. He holds awards from the Austrian Red Cross and the Olympic Games and is the author of *Das Leben der Frauen gesunden und kranken Tagen* (1937) and *Wunder des Lebens* (1935).

DR. JAMES HOLLY HANFORD is Professor of English at the Graduate School of Western Reserve University. He is considered one of the leading authorities on Milton and has published several books on that poet. For additional information see this Bulletin 32: 127 (January) 1944.

DR. BRUNO KISCH is a practising cardiologist in New York City. He came to the United States in 1938 as Professor at Yeshiva College and Research Fellow of Yale University. Previously he had held professorships at Cologne University and the University of Santander. He is editor-in-chief of *Cardiologia* (International Archives of Cardiology, Basel) and of *Quarterly Experimental Medicine and Surgery*. The present article is evidence of his interest in numismatics; a pioneer work in this field is his booklet *Shekel-Medals and False Shekels*.

DR. HUBERT J. NORMAN is Fellow of the Royal Society of Medicine and Medical Superintendent of the Camberwell House Mental Hospital. He was a Captain in the R.A.M.C. for a period during the last war; readers will be interested to know that the present article was written between interruptions from robot bombs in London. Dr. Norman is the author of *Mental Disorders: A Handbook for Students and Practitioners* (1928) and of psychiatric studies of William Blake, Friedrich Nietzsche, Swedenborg, and others; he has also written a number of papers in which psychiatry is examined from the historical point of view.

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